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ABSTRACT

Research on adolescent stress indicates that most high school students have experienced stress. This study was conducted to learn more about stress in western Kansas high school students. The sample was from 1A schools, defined as having less than 75 students enrolled in grades 10 to 12. Three-hundred twenty-two students participated. Stress was scored from the following scales of the Stress Questionnaire: (1) School; (2) Relationships; (3) Self; and (4) Total. Independent variables measured included gender, grade level, family structure, and religious factors. Consistent with other research, the results of an analysis of variance indicated that females reported greater stress than males. Much of the literature on adolescent stress indicates that coping skills improve as students progress from freshman to senior, but the results of this survey indicated that female seniors reported greater stress than any other classification group. Freshman males reported the least stress. The study also indicated that high school students from foster parent families had lower stress than those from intact families, although, in common with other research, greatest stress was reported for adolescents in single-parent and step-parent families. Students who prayed once a day indicated greater self- and total stress than those who never prayed. School counseling and interventions should be targeted toward student populations which tend to suffer greater stress. (CC)

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ED 369 004

STRESS AND WESTERN KANSAS HIGH SCHOOL STUDENTS

being

A Thesis Presented to the Graduate Faculty
of the Fort Hays State University in
Partial Fulfillment of the Requirements of
the Degree of Master of Science

by

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Abstract

The purpose of the researcher was to investigate stress in western Kansas high school students. The sample was from 1A schools. The 1A schools were classified by the Kansas State Activities Association (1993-94). The 1A schools were defined as having less than 74 students enrolled in grades 10-12. The sample consisted of 322 participants, 159 males, and 163 females. The independent variables investigated were gender, classification, family structure, religious preference, church attendance, bible reading, and prayer. The dependent variables consisted of scores from the following scales of the Stress Questionnaire: School, Relationships, Self, and Total. Five composite null hypotheses were tested employing analysis of variance (general linear model).

A total of 84 comparisons plus 56 recurring were made. Of the 84 comparisons, 28 were main effects and 56 were interactions. Of the 28 main effects, 12 were statistically significant at the .05 level. Of the 56 interactions, 9 were statistically significant at the .05 level. The results of the present study appeared to support the following generalizations:

1. females had greater stress related to Relationships than males,

2. females had greater Total stress than males,

3. students from stepparent family structure had greater Total stress than foster parent and other,

4. students who reported prayer once a day had greater Self stress than those who reported never,

5. significant interactions for:

   a. gender and classification--School,

   b. gender, classification, and family structure--School,

   c. classification and religious preference--Self,

   d. classification and religious preference--Total,

   e. family structure and religious preference--School,

   f. gender, family structure, and religious preference--Self,

   g. church attendance, Bible reading, and prayer--School,

   h. church attendance and prayer--Relationships, and

   i. church attendance, Bible reading, and prayer--Total.

Introduction

Overview

"Today's adolescent has become the unwilling, unintended victim of overwhelming stress -- the stress borne of rapid, bewildering social change and constantly rising expectations" (Elkind, 1992, p. 3). According to Peach and Reddick (1989), rapid change seems characteristic in the complex society in which most high school students live and function. Stress management in life stages is important for successful and effective relationships at school and in the family environment. The director of child and adolescent services at the Psychiatric Institute in Washington, D. C. stated that "today's children are increasingly thrust into independence and self-reliance before most have skills and ability to cope" (Brain, cited in Brophy & Walsh, 1986, p. 58). In the field of education, there has been much concern about stress becoming a part of contemporary living for the adolescent. Because adolescence is a time of rapid biological change, personal development, societal expectations, social interactions, and peer influence, the high school student is vulnerable to stress (Peach, 1991). How the adolescent perceives self in reference to the period of changes in

biological, cognitive, social, and effective functioning is the key indicator of the stress level the adolescent feels (Peach, 1991).

Strubbe (1989) reported that changed social conditions have exposed adolescents to additional sources of stress. One out of two marriages ends in divorce (Dobson & Bauer, 1990). Divorce has acted as a catalyst for other changes in the adolescent's life--loss of a parent, a move, school changes, financial problems, and adjustment to a step-parent. Adolescents from disrupted families (divorce, fighting, death) have displayed antisocial behavior (Chandler, 1982), run away (Van Houten & Golembiewski, 1978), attempted suicide (Gispert, Wheeler, Marsh, & Davis, 1985), exhibited psychological disturbances, (Hawkins, 1982) and committed delinquent acts (Novy & Donohue, 1985). One-fourth of adolescents from divorced families have revealed symptoms of distress (depression, anger, loneliness) five years after the divorce (Medeiros, Porter, & Welch, 1983). While exposed to many developmental and social changes, adolescents lack experience and resources for dealing with stress. Their lack of refined coping skills (Chandler, 1982) with difficulty in intellectually understanding stress (Medeiros et al., 1983) has exacerbated its effects.

In reviewing the historical background of the study of stress, Selye (1974) gave considerable attention to the evaluation of the stress concept. The concept of stress is very ancient. For the prehistoric man, it must have occurred to him that the loss of vigor and the feeling of exhaustion which overcame him after hard labor, loss of blood, prolonged exposure to cold or heat, agonizing fear, or any kind of disease all had something in common. During the second half of the 19th century, well before anyone thought about stress, a French physiologist, Claude Bernard, pointed out clearly that the internal environment of a living organism must remain fairly constant despite changes in its external environment (Selye, 1974). Fifty-years later, an American physiologist, Walter B. Cannon, suggested that self must maintain "homeostasis," the ability to stay static or the same in order to maintain a healthy mental state (Selye).

According to Armacost (1990), stress research in secondary education has been focused on teachers and administrators. Very little research has been conducted pertaining to adolescent stress. Sylwester (1983, as cited by Armacost, 1990), suggested that schools could function as stress-reduction agencies for adolescents. "To do so, knowledge of factors causing stress in students is required to eliminate or minimize the sources of distress and to

reinforce or expand those procedures that are positive stressors" (Armacost, 1990, p. 105).

Definition

"The word 'stress' comes from a Latin term strictus, which means to be drawn tight" (Minirth & Meier, 1992, p. 182). Stress has been described by Freud (cited in Elkind, 1992) has disturbed behavior that has arose out of conflict; it is a symptom of conflict either within the individual or between individuals or others. "To clarify the word, we turn to the man who 'discovered' stress, Dr. Hans Selye, a neurophysiologist at the Institute of Experimental Medicine and Surgery at the University of Montreal" (Sehnert, 1981, p. 19). Selye brought the concept of stress to public attention and gave this definition: "Stress is the nonspecific response of the body to any demand made upon it" (Selye, 1974, p. 14). Selye demonstrated that bodies react in a stereotyped and specific way to any special or extra demand (physical, emotional, intellectual) made upon it. According to Selye, situations, events, and people produce stress reactions called stressors. Stressors are not good or bad, they become special demands. The concept stress has been used interchangeably with other terms such as anxiety, worry, pressure, strain, and distress. The literature reviewed pertaining to the definition of stress explained it as a

by-product for the adolescent who is confronted by the demands of moving from one developmental stage to the next (Thoresen & Eagleston, 1983). Erikson (1968) was associated with the theoretical position that developmental crises presented challenges to adolescents. Other researchers have reported transition times and associated tasks or challenges; such as entering junior high school (Hamburg, 1974), adjusting to high school (Burke & Weir, 1978), and beginning college (Hamburg & Hamburg, 1975). The common definition cited in the literature for stress as a response to the demands of developmental transitions acknowledge the interaction between psychosocial factors and biological processes (Thoresen et al. 1983). During puberty, there are dramatic endocrine changes which affect both the internal and external structures and functioning of the body. These biological changes can become negative (distress) or they can be positive opportunities for adaptation (eustress), depending primarily on how the adolescent perceives these changes (Galyon, 1991).

Stress for the adolescent has generally been described as a mental, emotional, physical, and behavioral response to anxiety-producing events called stressors (Warrick, 1991). Peach and Reddick (1989) identified these stressors as: academic classwork, test-taking, grades, relationships with the opposite sex, negative home-family relationships,

feelings about personal appearance, pressures to succeed and achieve, feelings about self-worth and personal respect, peer acceptance, relationships with friends and pressures to be in the "fast-lane" (Peach et al., 1989).

Stressors for Adolescents

Academic classwork, grades, and test-taking. "Much of the research on school stress that goes beyond the narrow focus on test anxiety and school phobia has been done in the last two decades..." (Fahs, 1987, p. 10). The findings of Blom, Cheney, and Snoddy (1986) combined previous lists of stressors in the lives of adolescents (Coddington, 1972; Yamamoto, 1979) to arrive at a list of 87 stressors, 26 of which happen in school. Among the various school stressors cited were: being ridiculed in class, failure of a grade, and confusion about direction in class.

Grannis (1983a, 1983b) studied stressors in the junior high school environment, and reported a number of events and conditions which were upsetting to adolescents. Among these were feeling unsafe in school, the actuality or threat of academic failure, physical harm, having one's work copied, not being able to get answers to questions one asked, being shouted at, being unable to finish one's work in class, and having a large number of substitute teachers.

Students entering high school can experience a reaction similar to shock as they attempt to respond to the

multiplicity of responsibilities facing them (Benjamin, 1987). According to Benjamin (1987), research concerning student stress has been recent, stemming from not more than a decade ago. The problems perceived to be most intense were examinations and grades, fear of failure on specific assignments, career decisions, and financial concerns. Johnson (1978, cited in Benjamin, 1987) reported the results of studies of nine major categories of student stress, and the findings were supported by the results of several later studies. Among these were instruction, competition, organization of time, adjustment to high school, social adjustment, and finances. The students indicated that the most critical stressors had to do with the instructional process--grades, examinations, and studying.

Strubbe (1989) administered an Adolescent Stress Inventory in 13 high schools representing Arizona, Indiana, Michigan, Missouri, Kentucky, Maryland, and Delaware. Both rural and urban communities varying in population from 1,250 to over one-million were included. Student enrollment in participating schools ranged form 392 to 1,029. The results of this study indicated that the students reported stress in all aspects of their lives. Of the 20 most stressful items, 7 were experienced by 82-95 percent of the subjects; these included taking tests,

grades, speaking in front of class, and personal appearance. The source of minimal stress was getting along with teachers. Accordingly, school factors involving major judgments of academic competence or peer interactions were most stressful for this group. Females reported experiencing more stressors and more intense reactions than males. Additionally, special education students reported more stressful reactions than other students.

Armacost (1990) conducted a study that identified possible sources of student stress. The sample included 1,301 student sin grades 9-12 from a moderately large, contemporary, independent, suburban high school in a major midwestern metropolitan area. The sample breakdown included 262 seniors, 310 juniors, 383 sophomores, 341 freshmen, and 5 unknown, representing 82 percent of students in the school. The sample consisted of 683 (53 percent) females and 613 (47 percent) males. Of the participants who identified their race, 250 (19 percent) were ethnic minority students and 1,039 (81 percent) were white students. Eighty-five percent of the graduates typically pursued college studies and the main focus of the curriculum was college preparation. The results of this research indicated that 67 percent of the students thought that teachers graded about right, and 80 percent thought the grading was fair. The students were evenly split on

the question concerning teacher sensitivity. Nearly four-fifths indicated that the teachers were accessible for help outside of class. Teacher sensitivity and accessibility were clearly related to perceptions of grading and fairness.

Peach (1991) studied major causes of stress in the lives of high school students. A total of 240 students responded to a questionnaire concerning situations that cause stress. The sample included 144 females and 96 males. The results indicated that males (65 percent) and females (56 percent) agreed that work loads in traditional academic classes caused more stress than elective courses. Both males (66 percent) and females (71 percent) indicated that test taking was stressful. Concern about grades was less stressful for males (60 percent) compared to females (70 percent). The proportion of male (76 percent) adolescents concerned with pressure from school and classroom rules exceeded female (31 percent) adolescents in this study.

Galyon (1991) found that there was no significant difference between freshmen and senior concerning grades. However, more females (94.5 percent) were concerned about grades than males (72.3 percent).

Negative family relationships. Peach and Reddick (1989) studied 450 students in 15 high schools in rural

middle Tennessee concerning family life and parent relationships. An 18-item questionnaire was administered to the students concerning attitudes toward family relationships. Grollman and Sweder (1986, cited in Peach et al., 1989) reported data that indicated 55 percent of the adolescents in the United States have two parents who both work and many adolescents live in one-parent homes in which that parent works outside the home. Many adolescents spend considerable time alone and are referred to as latchkey adolescents. According to the results of this study, 55 percent of the boys and girls responded that they lived in a family situation which included both father and mother while 21 percent of the boys and 25 percent of the girls lived in a stepparent family. Eighteen percent of the girls and 22 percent of the boys were in single parent homes. Only two percent of girls and boys reported living alone. The four most prominent stressors for boys and girls were: 1) poor grades; 2) problems at home; 3) problems at school; and 4) need to work. The data also indicated that 46 percent of boys were at home alone after school, while 41 percent of girls had one parent at home after school. No significant communication problems existed between parents and their children; however, the students indicated that their parents were too strict.

Hart (1989) reported that not only has the influence and orientation of the extended family changed, but it was probable that both parents were working or that the adolescent lived with a single parent who must work. Separation and divorce were also more common and affected adolescents profoundly. Brophy et al., (1986) cited authors who predicted that three out of five adolescents today will live with a single parent by age 18. The results of this study indicated that 20 percent of families with adolescents were composed of fathers as breadwinners, mothers at home and children under 18, a decline from the 41 percent reported 10 years ago. According to these data, most adolescents are likely to experience a change in family structure before becoming legally independent. Another finding was that some adolescents lead two lives. They were expected to assume the role of the absent adult by doing household chores and caring for younger siblings. They were expected to function as adults at home and adolescents at school.

Larson and Larson (1990) cited the results of studies pertaining to divorce and its affects upon adolescents. Long term follow-up studies have indicated divorce produces emotional trauma that endures lifelong for adolescents. In a 10-year, follow-up study of families severed by divorce, Wallerstien and Blakeslee (1989, p. xix) stated "Even

though the divorce rate began to rise in the early 1970s and has remained high for a full generation, there is an extraordinary reluctance to acknowledge its seriousness and its enormous impact on adolescents' lives. We have been afraid to look at what is happening in our midst."

The number of adolescents affected by divorce and its stresses have increased. Since 1972, more than one million adolescents each year have experienced the breakup of their families. Because of divorce, adolescents have experienced a sense of profound rejection, abandonment, fear, and anger. The adolescent has felt guilty for the dissolution, blaming himself or herself for the divorce. Criminal behavior has become more strongly tied to disrupted family structure than to income level. Family instability has become one of the major causes of adolescent suicide which is the second leading cause of death among adolescents (Nelson, Farberow, & Litman, 1988; Wodarski & Harris, 1987; cited in Larson et al., 1990). Adolescents are more likely to become suicidal when raised in families lacking affection and intimacy. By contrast, adolescents who have lost a parent through death have not become more suicidal. The perception of being rejected by a parent rather than the loss of a parent has tended to lead adolescents to end their own lives. In a study of adolescent females who committed suicide, Warren and

Tomlison-Keasey (1987) reported that one of the most striking findings was the lack of involvement of their fathers. According to Larson et al., (1990), reaction to parents' divorce has included rebelliousness, which has led to poor selection of friends and a greater use of drugs. Behavior disorders were found twice as frequently in adolescents from one-parent homes.

Long and Forehand (1987) reported the results of a study concerning adolescents ages 11 to 14 and found that those from broken homes had greater difficulties in school and relationships with friends. Results indicated that divorce diminished the parents' ability to effectively monitor and discipline their adolescents. Quality of relationships with adolescents had deteriorated after a divorce, diminishing the adolescent's social competence and cognitive performance.

Galyon (1991) conducted a study concerning stress during the adolescent years. Subjects were chosen through random sampling from an urban high school in Tennessee with a total school population of 987. Forty-one percent were freshmen, 27 percent were seniors, and the remaining 22 percent were a combination of sophomores and juniors. The results indicated that parents gave more freedom to older adolescents, which unintentionally placed more stress on them. Males tended to have more freedom with parents

feeling that they could take care of themselves. Responses to the statement "Situations happening at home have no affect on students stress" indicated no significant differences among freshmen, sophomores, juniors, and seniors. There was a significant difference between males and females with 36 percent of the males disagreeing with the statement and 17 percent of the females disagreeing with the statement concerning family situations.

Relationships with the opposite sex. Hash and Vernon (1987) found that adolescents frequently have serious underlying stressors, even though many appear to be happy and carefree. Early adolescent behavior has become complex, thus both internal and external conflicts are created by the struggle to cope with emerging sexual interests, hormonal changes, emotional fluctuations, and increased needs for independence.

Peach (1991) reported the results of a study concerning stress among adolescents. Results indicated that both males (67 percent) and females (58 percent) indicated that relationships with the opposite sex created stress.

Galyon (1991) administered a stress questionnaire to freshmen through seniors in a rural area in Tennessee. Students ranged from 14-19 years of age and came from low, lower middle, middle, and upper middle socio-economic

families. Sixty-nine percent of the seniors agreed that boyfriend/girlfriend relationships caused stress while 58.9 percent of the freshmen disagreed. More females (55.8 percent) agreed that boyfriend/girlfriend relationships were stressful while (54.5 percent) of males disagreed.

Elkind (1992) found that there had been a dramatic increase in sexual activity of adolescents since the early 1960s. The rush to experiment has been most noticeable in teenage sexual behavior. Findings indicated that in the 1960s, 10 percent of adolescent girls were sexually active compared to 50 percent today. For adolescent boys, 25 percent were sexually active in the early 1960s, while a figure closer to 60 percent had been reported for the early 1990s. There are a number of stressful consequences of adolescent sexual liberation. The data indicated that 1.1 million adolescent girls became pregnant each year, which was the highest teenage-pregnancy rate of any Western country. Statistics indicated that the teen birthrate has been steadily declining over the last 15 years only due to the results of increased availability of abortions. While AIDS has appeared, it has not altered adolescent sexual behavior. For adolescents, there has been an increase in reported cases of venereal diseases (Elkind, 1992).

Van Oteghen and Forrest (1988) administered a survey on adolescent stress to 7th, 8th, and 9th grade students in

junior high school. The adolescents were asked to identify the level of stress in their lives, causes of stress and means of dealing with stress. Two-thirds of the students were white and one-third were black. Of the 68 students surveyed, 34 were male and 34 were female. The sample consisted of 20 ninth graders, 27 eighth graders, and 21 seventh graders. Fifty-two percent of the seventh graders, 44% of the eighth graders, and 80% of the ninth graders, reported stress in boy/girl relationships.

Pressures to succeed and achieve. Peach (1991) reported the results of a study pertaining to adolescent stress. Ninety-six males and 144 females responded to the stress questionnaire. Sixty-eight males and 106 females reported stress concerning the pressure to succeed and achieve. The majority of adolescents maintained that demands placed on them to succeed and to achieve caused stress in their lives. Thoughts about the future and overall success in life were more stressful to female students than to males.

Peach et al. (1989) conducted a study to determine rural high school students' attitudes toward family and school relationships. The data were presented by an item by item reporting procedure. The findings indicated that the majority (males 63 percent and females 57 percent) of the adolescents engaged in after-school employment.

Reasons for working were: 1) car payments, 2) clothing and necessities, 3) entertainment, and 4) to help their family.

Greenberger and Steinberg (1981) studied 212 sophomores and juniors holding first part-time jobs. They were compared to 319 adolescents who had never worked. Absences from school and work were viewed in this study as indicators of possible difficulties meeting other role obligations. School absences were related to work and exposure to work led to stress among females. A finding of the researchers, despite evidence of several adverse behavioral consequences of working, indicated boys working under more stressful conditions reported fewer symptoms of either physical or psychological distress than girls.

According to Elkind (1990), changes in technology and the occupational structure of society have made foreseeable and unavoidable entrance into the work force stressful for adolescents. Preparation for a vocation has become more difficult than it has been in the past, and the vocational future for adolescents has become unclear.

Strubbe (1989) administered an Early Adolescent Stress Inventory to 3,382 middle level students (grades 7, 8, and 9). The results indicated that one-fifth of the 20 most stressful items, including 2 of the top 5, reflected judgments of academic performance. Increased anxiety impaired attention and concentration, thus further impeding

academic success and achievement. This vicious cycle was exacerbated by coping patterns related to poor academic achievement--smoking (Brunswick & Messeri, 1984), alcohol use, running away, and delinquency. Schools made an important contribution to adolescent development by reexamination of the emphasis on academic achievement and provision of opportunities.

Feelings about self-worth. Elkind (1990) reported that following World War II, technology increasingly moved members of our society toward individualistic, self-fulfillment philosophies. As the possibility of pursuing a greater diversity of careers increased for young men and women, the ideal that all individuals should "do their own thing" became easier to attain. "'The psychologies that promoted self-fulfillment, such as Maslow's... notion of self-realization, Berne's... concept of being 'okay' and the contemporary idea of 'looking out for number one' did not produce the self fulfillment movement'" (Elkind, 1990, p. 5). Maslow and Berne reflected trends that were under way because of the thrust of technological innovations. According to Elkind (1990), it was reported that "Because of the self-fulfillment movement, deep interactions have become rare in nuclear families". Each person in the family has been spending a major portion of his or her time pursuing self-fulfillment and self realization.

"Adolescents gain a sense of self-esteem and security from deep interactions, from talking and being with people to whom they have become attached and who have become attached to them--people who support and accept the adolescent as an individual" (Elkind, 1990, p. 15). Increased surface interactions and decreased deep interactions highlights the unique stress of the times. Surface interactions have become stressful because adolescent are dealing with many people on the basis of objective indices of power, status, and ability. In contrast, adolescents in deep interactions are known well and their relationships are determined by personal qualities such as kindness and sensitivity. Adolescents without a solid base of deep interactions, a good sense of security and self-esteem have most likely suffered from a decrease of self-worth. Young teens have become hypersensitive to peer group approval, elated when they believe they have this approval, and devastated when they perceive it to be lost.

Peach (1991) studied high school students concerning stressors of feelings about self-worth and personal respect. The results indicated that the majority of the adolescents were sensitive to feelings of self-worth and personal respect. Fifty-six percent of high school boys and 72 percent of high school girls indicated stress

because of feelings concerning self-worth and personal respect.

Galyon (1991) conducted a study concerning adolescent stress and found that adolescent males have more freedoms with parents. Males indicated that they felt a greater self-worth whereas the adolescent females were more conscious of their personal appearance and emotions, thus causing more stress.

Relationships with peers, friends, and family. Peach (1991) reported the results of a study pertaining to stress which included 144 females and 96 males. The technique employed was a stress questionnaire. The data indicated that worry about being accepted by friends and peers was a matter of serious concern. Fifty-six percent of the males and 72 percent of the females reported stress concerning being accepted by peers. Eighty-eight percent of the females and 79 percent of the males reported stress concerning relationships with friends. One-third of the adolescents considered family relationships to be stressors.

Strubbe (1989) reported the results of a study pertaining to early adolescent stress factors. The results indicated that family relationships contributed to varying levels of anxiety. The death of a parent, brother/sister, or grandparent ranked very high among the top sources of

stress. Two-thirds of adolescents reported a serious illness or accident affecting family relationships. The student responses concerning death or illness often involved extended family members, (e.g. aunts/uncles, grandparents, cousins). Thus, many adolescents faced coping with difficult life experiences of illness and death of loved ones. Other home conditions contributing to students' stress included family relationships such as: 1) parents fighting, 2) parents divorced or separated, and 3) a family member having trouble with alcohol or drugs. Forty percent of adolescents maintained that substance abuse had affected family relationships.

Elkind (1990) found that peer group pressure often comes as a shock to adolescents who have encountered its intensity for the first time. For adolescents, their parents and parents' good opinion mattered most. But as part of the social and emotional metamorphosis that high school students encountered, peer opinion counted more, or, at least as much, as parental opinion.

Stressors experienced by adolescents also have to do with loss of relationships. The moving of many families every 5 years or more has meant that young adolescents have to separate from friends with whom they have grown up.

Pressure to be in the "fast-lane". Brophy et al., (1986) reported that harried parents beget harried

adolescents. Adolescents have a greater concern about time than is normal. One result of hurrying was that the adolescent's sense of achievement was compressed. Unlike previous generations, adolescents' daily routines have been dictated by mom and dad's workload.

Elkind (1992) found that the concept of adolescence, so vital to the traditional American way of life, has become threatened with extinction in our society. The adolescent's parent has lived in a pressure-cooker of competing demands, transitions, role changes, personal and professional uncertainties, over which he or she has exerted slight direction. Parents have hurried adolescents to grow up by treating them as adults in an effort to remove a portion of their burden of worry and anxiety thus enlisting the adolescent's aid in carrying life's load.

Who Adolescents Turn to in Times of Stress

The findings of Peach's (1991) study indicated that adolescents had ranked counselors as the first choice for discussing a problem. Males ranked their choices (in descending order of choice) as counselor, friends, parents, teachers and the school principal. Female adolescents indicated (first to last) counselors, teachers, parents, friends, and the school principal.

Wells and Ritter (1979) reported the results of a study indicating students had ranked the counseling of

students as one of the highest priority functions of counselors. A series of questions in the study asked if the adolescent would feel comfortable speaking to a particular individual in the school about a personal problem. Fifty-five percent indicated that they would not feel comfortable talking to anyone in the school staff. While that did not necessarily mean the students would not be willing to speak to someone, they did not feel comfortable and would not seek out a person to whom they would disclose personal problems. Thirty-four percent of students indicated that they would be comfortable talking to their guidance-counselor, 22 percent to their coach or club advisor, 20 percent to their teacher, and 18 percent to another person on the school staff. After controlling for students who did not feel comfortable talking to anyone, 52 percent of remaining adolescents indicated they would feel comfortable talking to a counselor, 34 percent to a coach or club advisor, 33 percent to another person on the staff, and 32 percent to a teacher. The results of the study indicated students were more comfortable with school counselors in talking about personal problems. Counselors were more likely to be sought as accessible by students with high stress levels compared to other school staff. Secondary school students who have experienced stress and

are more likely to seek guidance from a counselor have placed special demands on counselors.

How Adolescents Cope with Stress

According to Peach (1991), two adolescent groups (96 males and 144 females) reported their level of coping skills. A total of 47 male adolescents reported that they coped "okay" with stress, 23 indicated that they coped well, and 26 indicated that they did not cope well with stress. Twenty-eight female high school adolescents stated that they coped well with stress, 37 coped "okay," and 79 indicated they did not cope well with stress.

D'Onofrio and Klesse (1990) reported that adolescents have adopted coping behaviors that propel them into other stressful circumstances which have added to their burdens of responsibility and difficulties. Adolescents have appeared to acquire coping behaviors and styles from four different sources: 1) previous personal experiences in handling similar situations, 2) vicarious experience associated with observing the success or failure of others, especially family members, 3) perceptions of their own physiology and inferences that they have made about their vulnerability, and 4) social persuasion, particularly by parents, peers, and significant others. Coping behavior has been viewed as one important component of psychosocial competence by which a high school student has been able to

balance and manage the developmental tasks of this stage of the lifecycle. The coping process has been particularly important in adolescence, because the young people have been confronted with many life stressors and strains for the first time and have not developed a repertoire of coping responses from which to draw.

Armacost (1990) found that the ability to handle stress appeared to improve as students progressed from freshman to senior years. Male students and ethnic minority students were able to handle stress better than female students and Caucasian students. The data indicated that a few students who reported a fear of violence at school reported a reduced ability to handle stress.

Summary

A consistent finding in the research on stress of adolescents was that most high school students have experienced stress. There was, however, substantial evidence that there has been little research pertaining to adolescent stress.

There were three types of changes that affected how the adolescent perceived self and they were: a) biological, b) social, and c) cognitive. Stress for the adolescent was described as mental, emotional, physical, and behavioral responses to anxiety-producing events called stressors. The assessment of stress has been approached

through interviews and by more objective means, such as using instruments designed specifically to distinguish stressed adolescents from nonstressed adolescents. Most of the literature pertaining to stress among high school students indicated that when males were compared to females, males reported less stress than females. Females reported experiencing more stressors and more intense reactions than males. Additionally, special education students reported more stressful reactions than other students.

In the present researcher's review of the literature, the most common variables that were investigated with adolescents were: a) gender, b) classification, and c) family structure. In addition, other variables such as academic classwork, test-taking, grades, relationships with the opposite sex, negative home-family relationships, feelings about personal appearance, pressures to succeed and achieve, feelings about self-worth and personal respect, peer acceptance, relationships with friends, and pressures to be in the "fast-lane" have been investigated in regard to stress among adolescent populations. One of the most investigated relationships with regard to adolescent stress was the adolescent's relationship to family structure. Most researchers who have studied the relationship of family life and adolescent stress have

found that those who live with both parents or intact families were less likely to report high stress than those who were raised in nonintact families. There was much information on quality of family life and family structure in relation to an actual measure of stress among adolescents. Since the 1960's there has been an increase in psychological pressures which have replaced the physical stressors with which previous generations have had to contend. It is no longer true that most high school adolescents have come from two-parent homes where in the past the most potent drugs available were contained in aspirin and cough medicine. In today's society, students have access to a myriad of dangerous drugs. High school adolescents have encountered social and psychological pressures that would have daunted adults of a generation ago.

Statement of the Problem

The purpose of the researcher was to investigate stress in western Kansas high school students.

Rationale and Importance of the Research

High school counselors need to know adolescents most likely to be affected by stress and under what conditions because they provide services to individual students experiencing educational, personal, and social difficulties. Although there has been considerable study

concerning stress much of the research ha snot focused on adolescent populations. The fact that most research literature dealt with adult populations led the researcher to the selection of high school students as a targeted population to study.

The study is intended to review stressful events in the lives of high school student sin a rural area of western Kansas. This research is needed in order to identify populations most associated with stress (Elkind, 1992). The results of the present study could have a utility to a number of persons such as parents, educators, counselors, and religious leaders so they can better prepare adolescents to cope and live in a world that seems to be progressing quickly toward the liberal end of the continuum.

Stress is an important fact of life among high school students. They are affected by stressors in the school, in the home, in the work place, and in their social environment. Extreme effects of stress on adolescents are documented daily by the media in terms of suicide, violence, drug abuse, and alcohol abuse. Counselors need knowledge of which adolescents are most likely affected by stress and factors causing it to eliminate or minimize the sources of stressors in order to reinforce or expand those procedures that are positive stressors. Adolescents'

perceptions should provide certain information that will assist parents, educators, and other school personnel in addressing the issue of stress in the schools.

Results of the present study provided information pertaining to the following questions:

1. Is there an association between gender and reported stress in high school students?
2. Is there an association between high school classification and reported stress in high school students?
3. Is there an association between family structure and reported stress in high school students?
4. Is there an association between religion preference and reported stress in high school students?
5. Is there an association between church attendance and reported stress in high school students?
6. Is there an association between Bible reading and reported stress in high school students?
7. Is there an association between prayer and reported stress in high school students?

Composite Null Hypotheses

All null hypotheses were tested at the .05 level of significance.

1. The differences among the Stress Questionnaire scores for high school students according to gender,

classification, and family structure will not be statistically significant.

2. The differences among the Stress Questionnaire scores for high school students according to gender, classification, and religious preference will not be statistically significant.

3. The differences among the Stress Questionnaire scores for high school students according to classification, family structure, and religious preference will not be statistically significant.

4. The differences among the Stress Questionnaire scores for high school students according to gender, family structure, and religious preference will not be statistically significant.

5. The differences among the Stress Questionnaire scores for high school students according to church attendance, Bible reading, and prayer will not be statistically significant.

Definition of Variables

Independent Variables

All independent variables were obtained from the demographic sheet. The following independent variables were investigated.

1. gender - two levels,
   level 1 -- male, and
   level 2 -- female;

2. classification - four levels,

level 1 -- freshman,

level 2 -- sophomore,

level 3 -- junior, and

level 4 -- senior;

3. family structure - four levels determined post hoc,

level 1 -- intact,

level 2 -- father & stepmother
mother & stepfather

level 3 -- single father,
single mother,

level 4 -- foster parent,
other;

4. religious preference - three levels determined post hoc,

level 1 -- Presbyterian, Baptist, and Methodist,

level 2 -- Catholic and Episcopal,

level 3 -- Nondenominational and other;

5. church attendance - three levels determined post hoc,

level 1 -- once a week,

level 2 -- once a month,
once a year,

level 3 -- never;

6. Bible reading - three levels determined post hoc,

level 1 -- once a day,
once a week,

level 2 -- once a month,

level 3 -- never;

7. prayer - three levels determined post hoc,

level 1 -- once a day,

level 2 -- once a week,
once a month,

level 3 -- never.

Dependent Variables

Scores from the following scales of the Stress Questionnaire were employed as dependent variables:

1. School -- 6 items, possible scores 6-24;
2. Relationships -- 4 items, possible scores 4-16;
3. Self -- 9 items, possible scores 9-36; and
4. Total -- 19 items, possible scores 19-76.

Limitations

The following conditions may have affected the outcome of the present study:

1. The sample was not random,
2. all of the subjects came from the same geographical area, and
3. all information was self-reported.

Delimitations

The following were implemented concurrently with data analysis:

1. reliability study of the instrument, and
2. validity study of the instrument.

Methodology

Setting

The setting for this study was 1A high schools in northwest Kansas. The 1A high schools were classified by the Kansas State High School Activities Association (KSHSAA 1993-94). The 1A high schools were defined as schools with less than 74 students enrolled in grades 10-12. High school freshmen, sophomores, juniors, and seniors from Western Kansas Liberty League (WKLL) schools participated in the study. A league is a voluntary association for extracurricular activities. The Western Kansas Liberty League has 11 schools. The schools asked to participate were located south of U.S. Highway 36, on the east of State Highway 27, on and north of State Highway 96, and west of U.S. Highway 283. This region is sparsely populated where living is centered around farming, ranching, and other agricultural related businesses. Populations range from 300 to 900 people in these school communities. The towns are Cheylin, Brewster, Grinnell, Healy, Jennings, Rexford, Sharon Springs, Tribune, Utica, Weskan, and Winona. Letters of permission were sent initially to 11 principals of WKLL schools in towns fitting this description (Appendix B).

Subjects

The subjects were selected high school students enrolled in the participating schools. From the participating schools, an English class for each classification was chosen by the administrator of each school. All students present and willing to participate were included. The sample consisted of 322 subjects, 163 females, and 159 males. Included were: 84 freshmen, 76 sophomores, 96 juniors, and 66 seniors.

Instruments

Two instruments were used to collect data. The instruments employed were a demographic data sheet and the Stress Questionnaire.

Stress Questionnaire. The Stress Questionnaire developed by Peach (1991) was employed as the instrument to measure stress (Appendix D). It is a 21-item instrument. Items 1 through 19 have a modified Likert-type scale. Item 20 addressed who the student would most likely talk with pertaining to school related problems and Item 21 addressed students' assessment of personal coping skills. Information from these two items was reported in Appendixes G and H. The scale is 1-4 points and labeled strongly disagree, disagree, agree, and strongly agree. The 19 items were grouped into the following categories by two of

the thesis committee members (Dr. James Stansbury and Dr. Tom Guss):

1. School--items number 1, 2, 4, 9, 11, and 18 (possible scores 6-24);

2. Relationships--items number 3, 5, 16, and 17 (possible scores 4-16);

3. Self--items number 6, 7, 8, 10, 12, 13, 14, 15, and 19 (possible scores 9-36); and

4. Total--items 1-19 (possible scores 19-76).

No reliability or validity values had been compiled for the instrument. The researcher compiled Crombach alpha coefficients and factor loading validity values concurrently with the study (Appendixes I-O).

Demographic data sheet. The demographic data sheet was developed by the researcher (Appendix C). Information from the demographic sheet was used to describe the subjects and as independent variables. The demographic sheet addressed the following: age, gender, classification, location of school, father's occupation, mother's occupation, type of family, religious preference, how often do you attend church, how often do you read the Bible, and how often do you pray.

Design

A status survey factorial design was employed. The following independent variables were investigated: gender,

classification, family structure, religious preference, church attendance, Bible reading, and prayer. The dependent variables were scores from the following scales of the Stress Questionnaire: School, Relationships, Self, and Total.

Five composite null hypotheses were tested employing three-way analysis of variance (general linear model). The following designs were employed with the composite null hypotheses:

Composite null hypothesis number one, a 2 x 4 x 4 factorial design;

Composite null hypothesis number two, a 2 x 4 x 3 factorial design;

Composite null hypothesis number three, a 4 x 4 x 3 factorial design;

Composite null hypothesis number four, a 2 x 4 x 3 factorial design; and

Composite null hypothesis number five, a 3 x 3 x 3 factorial design.

MacMillan and Schumacher (1989) cited 10 threats to internal validity. The 10 threats to internal validity were dealt with in the following ways in the present study:

1. history--did not pertain because the present study was status survey,

2. maturation--did not pertain because the present study was status survey,

3. testing--did not pertain because the present study was status survey,

4. instrumentation--did not pertain because the present study was status survey,

5. statistical regression--did not pertain because the present study was status survey,

6. selection--all completed copies of the questionnaires were employed,

7. experimenter bias--no implementation was made and the same written instructions were read to each group of subjects,

8. experimental mortality--did not pertain because the present study was status survey,

9. maturation--did not pertain because of a relatively short, less than one hour, testing time and because of the fact that this was not a longitudinal study, and

10. statistical conclusions--two mathematical assumptions were violated (random sampling and equal number of subjects in cells). A general linear model was employed to correct for lack of equal number of subjects in cells and the researcher did not project interpretations beyond the statistical procedures employed.

McMillan and Schumacher (1989) addressed two threats to external validity. The threats to external validity were dealt with in the following manner:

1. population external validity--the sample was not random; therefore, the results should be generalized only to similar groups; and

2. ecological external validity--there was no implementation and the instruments were administered according to standard accepted procedures.

Data Collection Procedure

The researcher initially contacted 11 school principals by letter (Appendix B) asking permission to come into their schools to conduct the present study. For the schools giving permission, the researcher set up a time with each English instructor in which she could go into the classroom and administer copies of the demographic data sheet and the Stress Questionnaire (Appendix C and D, respectively). The researcher read a prepared instruction sheet to the subjects in order to maintain consistency (Appendix A). The researcher asked the subjects to bring the completed copies of the demographic data sheet and Stress Questionnaire to the front of the class to the researcher. The data were coded and analyzed by the main-frame computer at Fort Hays State University.

Research Procedure

The researcher implemented the following procedures in the process of conducting the study:

1. selected research topic,
2. conducted computer search, (ERIC, Educational Index, Psych. Lit., Academic Abstracts, and Reader's Guide),
3. surveyed related literature,
4. identified variables,
5. conducted second computer search,
6. surveyed additional literature,
7. selected instruments,
8. wrote comprehensive review of related literature,
9. compiled research proposal,
10. defended research proposal,
11. collected data,
12. analyzed data,
13. wrote final research report,
14. defended final research report, and
15. completed final editing of the research report.

Data Analysis

The following were compiled:

1. appropriate descriptive statistics,
2. three-way analysis of variance (general linear model),

3. Bonferroni (Dunn) t-test for multiple comparisons of means, and

4. Duncan's multiple range test for means.

Results

The purpose of the researcher was to investigate stress in western Kansas high school students. The sample was from 1A schools. The 1A schools were classified by the Kansas State High School Activities Association (1993-94). The 1A high schools were defined as having less than 74 students enrolled in grades 10-12. The sample consisted of 322 participants, 159 males, and 163 females. The independent variables investigated were gender, classification, family structure, religious preference, church attendance, Bible reading, and prayers. The dependent variables consisted of scores from the following scales of the Stress Questionnaire: School, Relationships, Self, and Total. Five composite null hypotheses were tested employing analysis of variance (general linear model) using the following designs:

composite null hypothesis number one, a 2 x 4 x 4 factorial design,

composite null hypothesis number two, a 2 x 4 x 3 factorial design,

composite null hypothesis number three, a 4 x 4 x 3 factorial design,

composite null hypothesis number four, a 2 x 4 x 3 factorial design, and

composite null hypothesis number five, a 3 x 3 x 3 factorial design.

The results section was organized according to composite null hypotheses for ease of reference. Information pertaining to each hypothesis was presented in a common format for ease of comparison.

It was hypothesized in composite null hypothesis number one that the differences among the mean Stress Questionnaire scores for high school students according to gender, classification, and family structure would not be statistically significant. The following were cited in Table 1: variables, group sizes, means, standard deviations, F values, and probability levels.

Table 1: A Comparison of Mean Stress Questionnaire Scores for High School Students According to Gender, Classification, and Family Structure Employing a Three-Way Analysis of Variance

Variable	n	M*	s	F value	p level
		School			
Gender (A)					
Male	159	17.8[a]	2.72	10.58	.0011
Female	163	18.7[b]	2.26		
Classification (B)					
Freshman	84	18.1	2.42		
Sophomore	76	18.2	2.46	2.01	.1121
Junior	96	18.1	2.57		
Senior	66	18.8	2.72		
Family Structure (C)					
1. Intact	223	18.2	2.39		
2. Father & Stepmother Mother & Stepfather	44	18.4	2.38	1.07	.3629
Single father Single mother	34	18.6	2.58		
Foster parent Other	21	18.3	4.09		
		Interactions			
	A x B			2.63	.0503
	A x C			1.53	.2058
	B x C			0.74	.6678
	A x B x C			1.97	.0429

(continued)

Table 1 (continued)

Variable	n	M*	s	F value	p level
		Relationships			
Gender (A)					
Male	159	10.8[a]	2.28	26.35	.0001
Female	162	12.4[b]	1.92		
Classification (B)					
Freshman	84	11.4	2.55		
Sophomore	75	11.4	2.32	2.46	.0628
Junior	96	11.5	1.90		
Senior	66	12.2	2.11		
Family Structure (C)					
1. Intact	222	11.6	2.25		
2. Father & Stepmother Mother & Stepfather	44	11.7	1.99	0.17	.9150
Single father Single mother	34	11.6	2.28		
Foster parent Other	21	11.5	2.66		
		Interactions			
		A x B		0.25	.8621
		A x C		0.57	.6376
		B x C		1.64	.1025
		A x B x C		0.84	.5837

(continued)

Table 1 (continued)

Variable	n	M*	s	F value	p level
		Self			
Gender (A)					
Male	158	24.6[a]	3.96	31.29	.0001
Female	163	27.5[b]	3.45		
Classification (B)					
Freshman	83	25.9	4.11	0.80	.4961
Sophomore	76	25.5	4.12		
Junior	96	26.1	3.58		
Senior	66	26.7	2.18		
Family Structure (C)					
1. Intact	222	26.1[a]	3.86	4.13	.0069
2. Father & Stepmother Mother & Stepfather	44	26.9[a]	4.34		
Single father Single mother	34	25.9	4.94		
Foster parent Other	21	23.8[b]	4.94		
		Interactions			
A x B				1.23	.2982
A x C				0.33	.8002
B x C				0.66	.7487
A x B x C				1.39	.1940

(continued)

Table 1 (continued)

Variable	n	M*	s	F value	p level
		Total			
Gender (A)					
Male	158	53.2[a]	7.37	34.28	.0001
Female	162	58.6[b]	6.23		
Classification (B)					
Freshman	83	55.5	7.84		
Sophomore	75	55.2	7.31	1.75	.1575
Junior	96	55.7	6.52		
Senior	66	57.7	7.67		
Family Structure (C)					
1. Intact	221	55.9	7.18		
2. Father & Stepmother Mother & Stepfather	44	57.0	6.55	2.13	.0965
Single father Single mother	34	56.2	7.18		
Foster parent Other	21	53.6	10.16		
		Interactions			
	A x B			1.73	.1602
	A x C			0.71	.5449
	B x C			0.93	.5031
	A x B x C			1.79	.0692

*The larger the value the greater the reported stress. The possible scores and theoretical means for each scale were as follows: School (6-24, 15); Relationships (4-16, 10); Self (9-36, 22.5); Total (19-76, 47).

[ab]Difference statistically significant at the .05 level according to Bonferroni (Dunn) t-test for means.

Seven of the 28 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. Five of the statistically significant comparisons were for main effects. The following main effects were statistically significant:

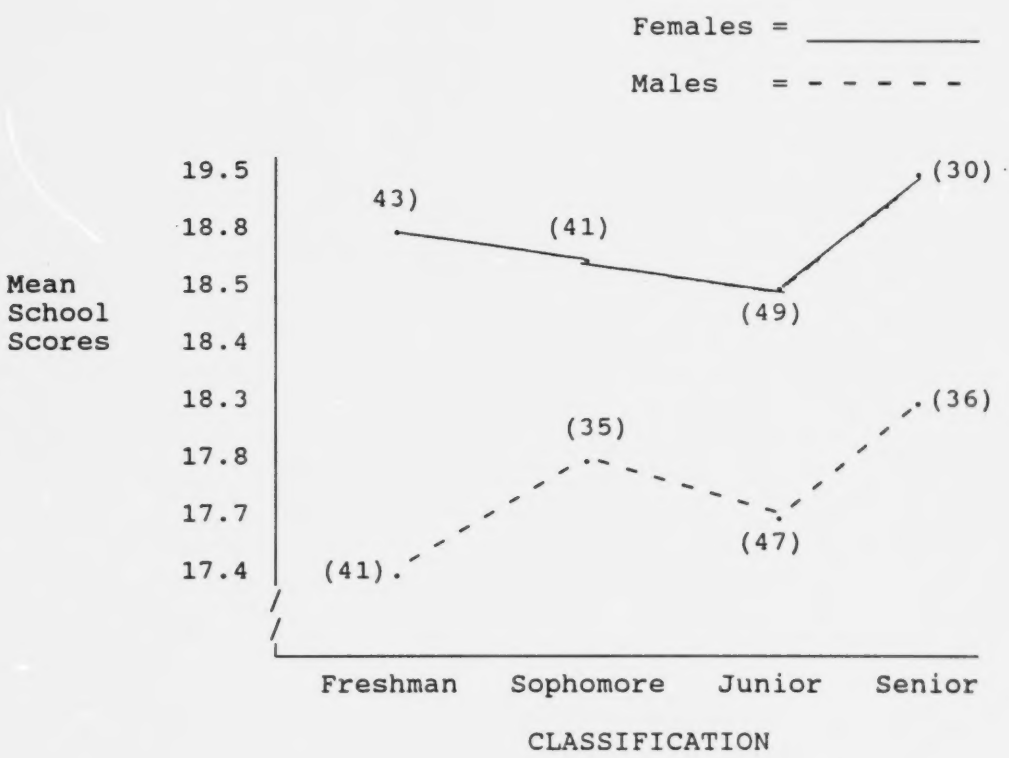
1. gender for the dependent variable School,
2. gender for the dependent variable Relationships,
3. gender for the dependent variable Self,
4. family structure for the dependent variable Self, and
5. gender for the dependent variable Total.

The information cited in Table 1 indicated the following for main effects:

1. females reported greater stress related to School than males,
2. females reported greater stress related to Relationships than males,
3. females reported greater stress related to Self than males,
4. high school students from intact family structure and stepparent family structure reported greater stress related to Self than those from foster parent family structure, and
5. females reported greater Total stress than males.

Two of the 7 significant comparisons were for interactions. The following interactions were statistically significant: 1. gender and classification for the dependent variable School; and 2. gender, classification, and family structure for the dependent variable School. The interaction between gender and classification for the dependent variable School was depicted in a profile plot. Figure 1 contains the following: mean School scores and curves for gender.

Figure 1: The interaction Between Gender and Classification for the Dependent Variable School



The interaction between gender and classification for the dependent variable School was ordinal. The information cited in Figure 1 indicated the following:

1. females at all classification levels reported numerically greater stress for School than males,

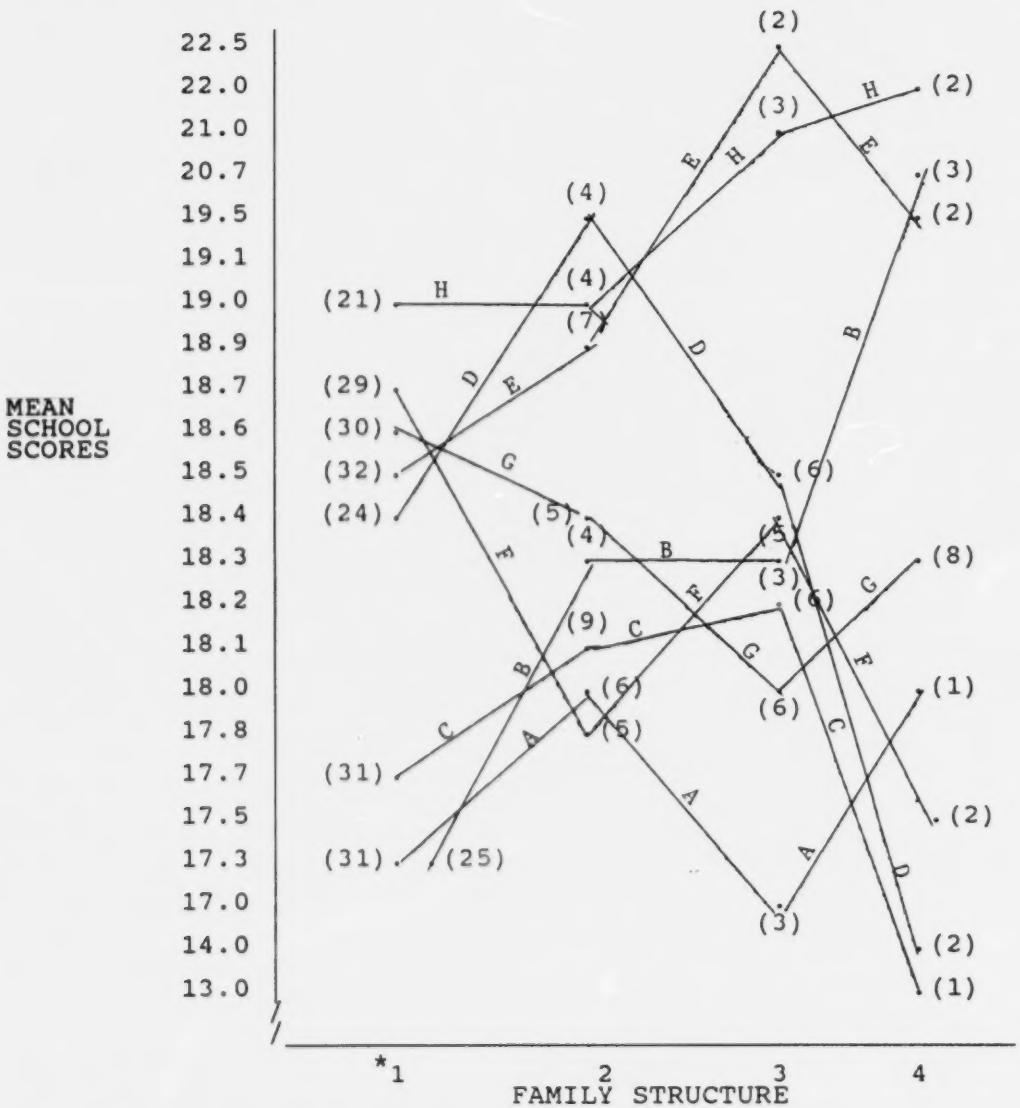
2. Junior females reported numerically less stress than females for other classification, and

3. Freshmen males reported numerically less stress than any other subgroups.

The interaction among gender, classification, and family structure for the dependent variable School was depicted in profile plot. Figure 2 contains the following: mean School scores and curves for gender and classification.

Figure 2: The Interaction Among Gender, Classification, and Family Structure for the Dependent Variable School

Male-Freshman	= A	Female-Freshman	= E
Male-Sophomore	= B	Female-Sophomore	= F
Male-Junior	= C	Female-Junior	= G
Male-Senior	= D	Female-Senior	= H



*1=Intact 2=Step-Parent 3=Single parent 4=Foster Parent Other

The interaction among gender, classification, and family structure for the dependent variable School was disordinal. The results cited in Table 2 indicated the following:

1. female freshmen from single parent family structure reported numerically greater stress than any other subgroups.

2. female seniors reported numerically greater stress than any other classification group,

3. male freshmen reported numerically less stress than any other group.

It was hypothesized in composite null hypothesis number two that the differences among the mean Stress Questionnaire Scores for high school students according to gender, classification, and religious preference would not be statistically significant. The following were cited in Table 2: variables, group sizes, means, standard deviations, F values, and probability levels.

Table 2: A Comparison of Mean Stress Questionnaire Scores for High School Students According to Gender, Classification, and Religious Preference Employing a Three-Way Analysis of Variance

Variable	n	M*	s	F value	p level
		School			
Gender (A)					
Male	159	18.7[a]	2.72	13.08	.0004
Female	163	17.8[b]	2.26		
Classification (B)					
Freshman	84	18.1	2.41		
Sophomore	76	18.2	2.46	1.32	.2664
Junior	96	18.1	2.57		
Senior	66	18.1	2.72		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	18.5	2.38		
2. Catholic Episcopal	111	18.1	2.60	0.66	.5187
3. Nondenominational Other	105	18.2	2.65		
		Interactions			
A x B				0.55	.6488
A x D				0.61	.5428
B x D				1.45	.1937
A x B x D				1.17	.3221

(continued)

Table 2 (continued)

Variable	n	M*	s	F value	p level
		Relationships			
Gender (A)					
Male	159	10.8[a]	2.28	40.65	.0001
Female	162	12.4[b]	1.92		
Classification (B)					
Freshman	84	11.4	2.42		
Sophomore	75	11.4	2.32	2.10	.1006
Junior	96	11.4	1.90		
Senior	66	12.1	2.11		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	11.8	2.11		
2. Catholic Episcopal	110	11.3	2.27	1.04	.3548
3. Nondenominational Other	105	11.5	2.32		
		Interactions			
	A x B			1.42	.2380
	A x D			0.38	.6287
	B x D			0.75	.6071
	A x B x D			0.72	.6298

(continued)

Table 2 (continued)

Variable	n	M*	s	F value	p level
		Self			
Gender (A)					
Male	158	24.6[a]	3.96	40.65	.0001
Female	163	2.75[b]	3.45		
Classification (B)					
Freshman	83	25.9	4.11		
Sophomore	76	25.5	4.12	2.10	.1006
Junior	96	26.1	3.58		
Senior	66	26.7	4.18		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	26.4	3.55		
2. Catholic Episcopal	110	26.1	4.32	1.04	.3548
3. Nondenominational Other	105	25.6	4.02		
		Interactions			
	A x B			1.42	.2380
	A x D			0.38	.6827
	B x D			0.75	.6071
	A x B x D			0.72	.6298

(continued)

Table 2 (continued)

Variable	n	M*	s	F value	p level
		Total			
Gender (A)					
Male	158	53.2	7.37	52.03	.0001
Female	162	58.6	6.23		
Classification (B)					
Freshman	83	55.5	7.84		
Sophomore	75	55.2	7.31	2.10	.0998
Junior	96	55.7	6.52		
Senior	66	57.7	7.67		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	56.7	6.71		
2. Catholic Episcopal	109	55.7	7.62	0.89	.4118
3. Nondenominational Other	105	55.4	7.60		
		Interactions			
		A x B		0.59	.6230
		A x D		0.03	.9724
		B x D		1.99	.0674
		A x B x D		0.57	.7547

*The larger the value the greater the reported stress. The possible scores and theoretical mans for each scale were as follows: School (6-24, 15); Relationships (4-16, 10); Self (9-36, 22.5); Total (19-76, 47).

[ab]Difference statistically significant at the .05 level according to Bonferroni (Dunn) t-test for means.

Four of the 28 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. The four statistically significant comparisons were for the following main effects:

1. gender and the dependent variable School (recurring, Table 1),

2. gender and the dependent variable Relationships (recurring, Table 1),

3. gender and the dependent variable Self (recurring, Table 1), and

4. gender and the dependent variable Total (recurring, Table 1).

The results cited in Table 2 indicated no additional associations between independent and dependent variables.

It was hypothesized in composite null hypothesis number three that the differences among the mean Stress Questionnaire scores for high school students according to classification, family structure, and religious preference would not be statistically significant. The following were cited in Table 3: variables, group sizes, means, standard deviations, F values, and probability levels.

Table 3: A Comparison of Mean Stress Questionnaire Scores for High School Students According to Classification, Family Structure, and Religious Preference Employing a Three-Way Analysis of Variance

Variable	n	M*	s	F value	p level
		School			
Classification (B)					
Freshman	84	18.1	2.42		
Sophomore	76	18.2	2.46	0.87	.4582
Junior	96	18.1	2.57		
Senior	66	18.8	2.72		
Family Structure (C)					
1. Intact	223	18.2	2.39		
2. Father & Stepmother Mother & Stepfather	44	18.4	2.38	1.33	.2369
Single father Single mother	34	18.6	2.58		
Foster parent Other	21	18.3	4.09		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	18.5	2.38		
2. Catholic Episcopal	111	18.1	2.60	1.71	.1831
3. Nondenominational Other	105	18.2	2.65		
		Interactions			
B x C				0.26	.9850
A x D				1.67	.1280
C x D				1.81	.0972
B x C x D				1.26	.2252

(continued)

Table 3 (continued)

Variable	n	M*	s	F value	p level
		Relationships			
Classification (B)					
Freshman	84	11.4	2.55		
Sophomore	75	11.4	2.32	1.92	.1260
Junior	96	11.5	1.90		
Senior	66	12.2	2.11		
Family Structure (C)					
1. Intact	222	11.6	2.25		
2. Father & Stepmother Mother & Stepfather	44	11.7	1.99	0.16	.9235
Single father Single mother	34	11.6	2.28		
Foster parent Other	21	11.5	2.66		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	11.9	2.11		
2. Catholic Episcopal	110	11.4	2.27	0.67	.5132
3. Nondenominational Other	105	11.6	2.32		
		Interactions			
	B x C			1.19	.2992
	B x D			1.39	.2182
	C x D			0.46	.8391
	B x C x D			1.19	.2777

(continued)

Table 3 (continued)

Variable	n	M*	s	F value	p level
		Self			
Classification (B)					
Freshman	83	25.9	4.11		
Sophomore	76	25.5	4.11	0.87	.4593
Junior	96	26.1	3.58		
Senior	66	26.7	4.18		
Family Structure (C)					
1. Intact	222	26.1	3.86		
2. Father & Stepmother Mother & Stepfather	44	26.9	3.47	1.82	.1439
Single father Single mother	34	25.9	4.34		
Foster parent Other	21	23.8	4.94		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	26.4	3.55		
2. Catholic Episcopal	110	26.1	4.32	0.66	.5158
3. Nondenominational Other	105	25.7	4.02		
		Interactions			
	B x C			0.58	.8160
	B x D			3.36	.0033
	C x D			0.84	.5407
	B x C x D			1.19	.2820

(continued)

Table 3 (continued)

Variable	n	M*	s	F value	p level
		Total			
Classification (B)					
Freshman	83	55.5	7.84		
Sophomore	75	55.2	7.31	1.02	.3852
Junior	96	55.7	6.52		
Senior	66	57.7	7.67		
Family Structure (C)					
1. Intact	221	55.9	7.18		
2. Father & Stepmother Mother & Stepfather	44	57.0	6.55	0.45	.7161
Single father Single mother	34	56.2	7.18		
Foster parent Other	21	53.6	10.16		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	56.7	6.71		
2. Catholic Episcopal	109	55.7	7.62	0.51	.6020
3. Nondenominational Other	105	55.4	7.60		
		Interactions			
	B x C			0.45	.9045
	B x D			2.62	.0174
	C x D			0.89	.5036
	B x C x D			1.24	.2437

*The larger the value the greater the reported stress. The possible scores and theoretical means for each scale were as follows: School (6-24, 15); Relationships (4-16, 10); Self (9-36, 22.5): Total (19-76, 47).

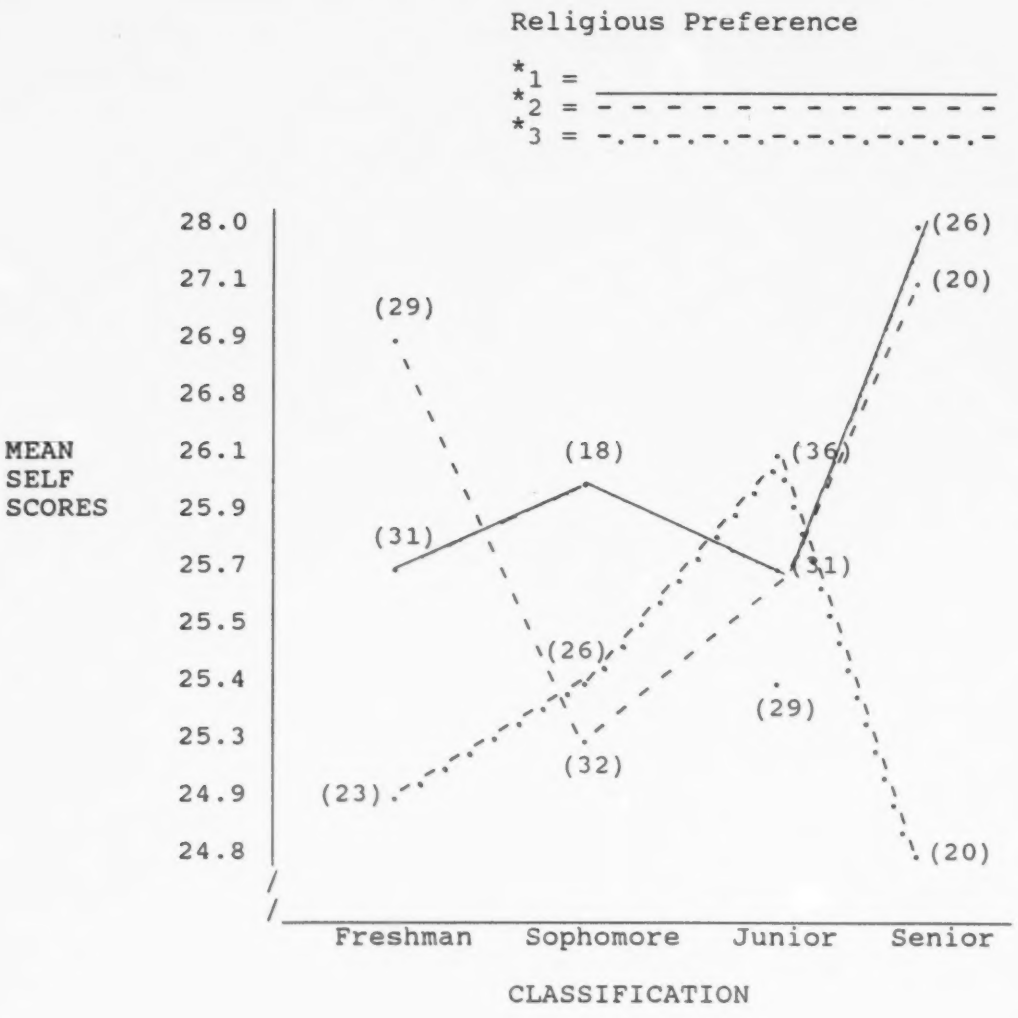
Two of the 28 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. The statistically significant comparisons were for the following interactions:

1. classification and religious preference for the dependent variable Self, and

2. classification and religious preference for the dependent variable Total.

The interaction between classification and religious preference for the dependent variable Self was depicted in a profile plot. Figure 3 contains mean Self scores and curves for religious preference.

Figure 3: The Interaction Between Classification and Religious Preference for the Dependent Variable Self



*1=Presbyterian Baptist Methodist *2=Catholic Episcopal *3=Nondenominational Other

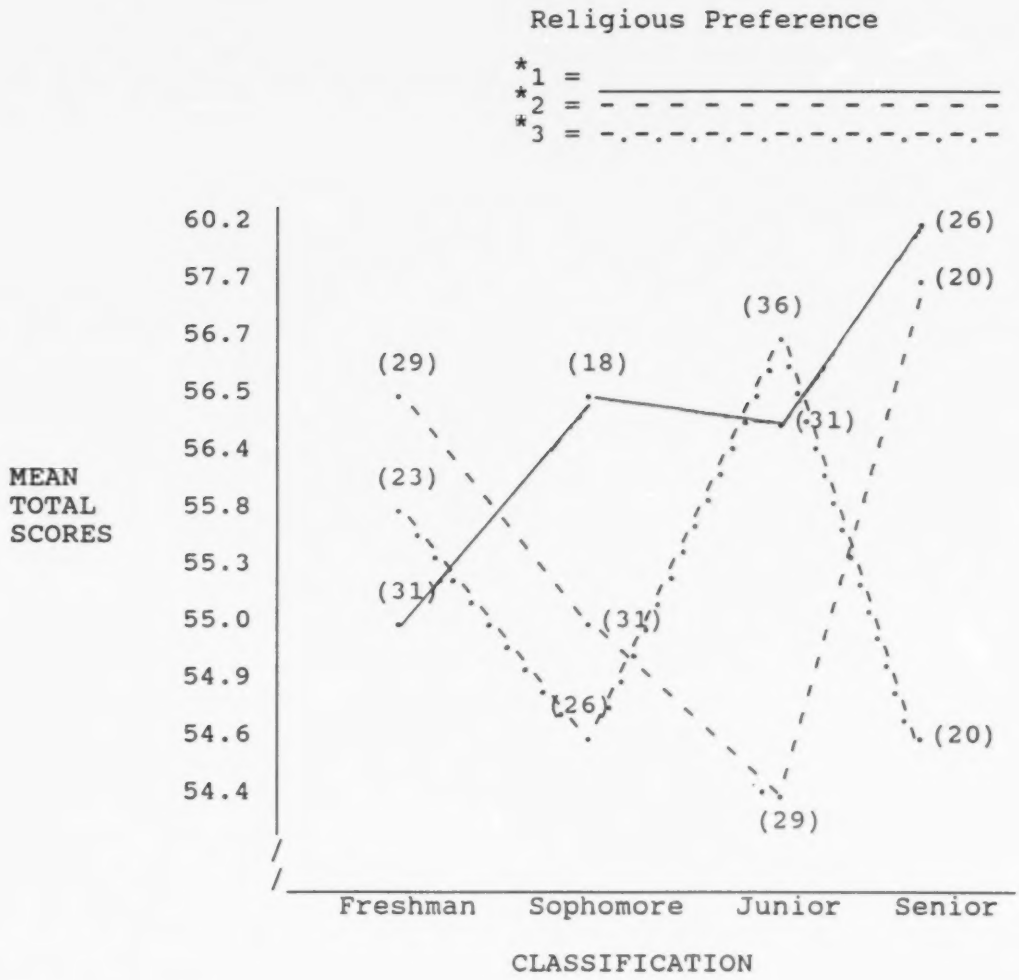
The interaction between classification and religious preference for the dependent variable Self was disordinal. The results cited in Table 3 cited the following:

1. Presbyterian, Baptist, and Methodist seniors reported numerically the greatest Self stress of any subgroup, and

2. Nondenominational and Other seniors reported numerically the lowest Self stress of any subgroup.

The interaction between classification and religious preference for the dependent variable Total was depicted in a profile plot. Figure 4 contains mean Total scores and curves for religious preference.

Figure 4: The Interaction Between Classification and Religious Preference for the Dependent Variable Total



*1=Presbyterian Baptist Methodist *2=Catholic Episcopal *3=Nondenominational Other

The interaction between classification and religious preference for the dependent variable Total was disordinal. Results cited in Figure 4 indicated the following:

1. Presbyterian, Baptist and Methodist seniors reported numerically the greatest Total stress of any subgroup, and

2. Catholic and Episcopal juniors reported numerically the lowest Total stress of any subgroup.

It was hypothesized in composite null hypothesis number four that the differences among the mean Stress Questionnaire scores for high school students according to gender, family structure, and religious preference would not be statistically significant. The following were cited in Table 4: variables, group sizes, means, standard deviations, F values, and probability levels.

Table 4: A Comparison of Mean Stress Questionnaire Scores for High School Students According to Gender, Family Structure, and Religious Preference Employing a Three-Way Analysis of Variance

Variable	n	M*	s	F value	p level
		School			
Gender (A)					
Male	159	17.8	2.72	3.55	.0605
Female	163	18.7	2.26		
Family Structure (C)					
1. Intact	223	18.1	2.39		
2. Father & Stepmother Mother & Stepfather Single father Single mother	44 34	18.4 18.6	2.38 2.58	0.61	.6101
Foster parent Other	21	18.3	4.09		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	18.5[g]	2.38		
2. Catholic Episcopal	111	18.1	2.60	3.03	.0500
3. Nondenominational Other	105	18.2[h]	2.65		
		Interactions			
	A x C			0.28	.8374
	A x D			1.72	.1814
	C x D			2.71	.0140
	A x C x D			1.51	.1752

(continued)

Table 4 (continued)

Variable	n	M*	s	F value	p level
		Relationships			
Gender (A)					
Male	159	10.8[a]	2.28	21.28	.0001
Female	162	12.4[b]	1.92		
Family Structure (C)					
1. Intact	222	11.6	2.55		
2. Father & Stepmother Mother & Stepfather Single father Single mother Foster parent Other	44 34 21	11.7 11.6 11.5	2.32 1.90 2.11	1.40	.2434
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	11.9	2.11		
2. Catholic Episcopal	110	11.4	2.27	1.50	.2249
3. Nondenominational Other	105	11.6	2.32		
		Interactions			
A x C				1.29	.2771
A x D				0.05	.9495
C x D				1.25	.2800
A x C x D				1.81	.0965

(continued)

Table 4 (continued)

Variable	n	M*	s	F value	p level
		Self			
Gender (A)					
Male	158	24.6[a]	3.96	38.89	.0001
Female	163	27.5[b]	3.45		
Family Structure (C)					
1. Intact	222	26.1[a]	4.11		
2. Father & Stepmother Mother & Stepfather	44	26.9[a]	4.12	6.67	.0002
Single father Single mother	34	25.9	3.58		
Foster parent Other	21	23.8[b]	4.18		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	26.4	3.55		
2. Catholic Episcopal	110	26.1	4.32	1.09	.3392
3. Nondenominational Other	105	25.7	4.02		
		Interactions			
		A x C		1.62	.1843
		A x D		2.86	.0588
		C x D		1.36	.2295
		A x C x D		2.22	.0411

(continued)

Table 4 (continued)

Variable	n	M*	s	F value	p level
		Total			
Gender (A)					
Male	158	53.2[a]	7.37	29.69	.0001
Female	163	58.6[b]	6.22		
Family Structure (C)					
1. Intact	222	55.9	7.18		
2. Father & Stepmother Mother & Stepfather	44	57.0[d]	6.55	2.74	.0438
Single father Single mother	34	56.2	7.18		
Foster parent Other	21	53.6[e]	10.16		
Religious Preference (D)					
1. Presbyterian Baptist Methodist	106	56.7	6.71		
2. Catholic Episcopal	110	55.7	7.62	1.24	.2915
3. Nondenominational Other	105	55.4	7.60		
		Interactions			
A x C				0.89	.4463
A x D				0.29	.7508
C x D				1.51	.1745
A x C x D				1.61	.1454

*The larger the value the greater the reported stress. The possible scores and theoretical means for each scale were as follows: School (6-24, 15); Relationships (4-16, 10); Self (9-36, 22.5); Total (19-76, 47).

[ab]Difference statistically significant at the .05 level according to Bonferroni (Dunn) t-test for means.

[de]Difference statistically significant at the .05 level according to Duncan's multiple range test for means.

[gh]Difference statistically significant at the .05 level.

Eight of the 28 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. Six of the statistically significant comparisons were for main effects. The following main effects were statistically significant:

1. religious preference for the dependent variable School,

2. gender for the dependent variable Relationships (recurring, Table 1),

3. gender for the dependent variable Self (recurring, Table 1),

4. family structure for the dependent variable Self (recurring, Table 1),

5. gender and the dependent variable Total (recurring, Table 1),

6. family structure for the dependent variable Total.

The results cited in Table 4 indicated the following for main effects:

1. Presbyterian, Baptist, and Methodist students reported greater School stress than Catholic and Episcopal students, and

2. students from stepparent family structure reported greater Total stress than those from foster parent and other.

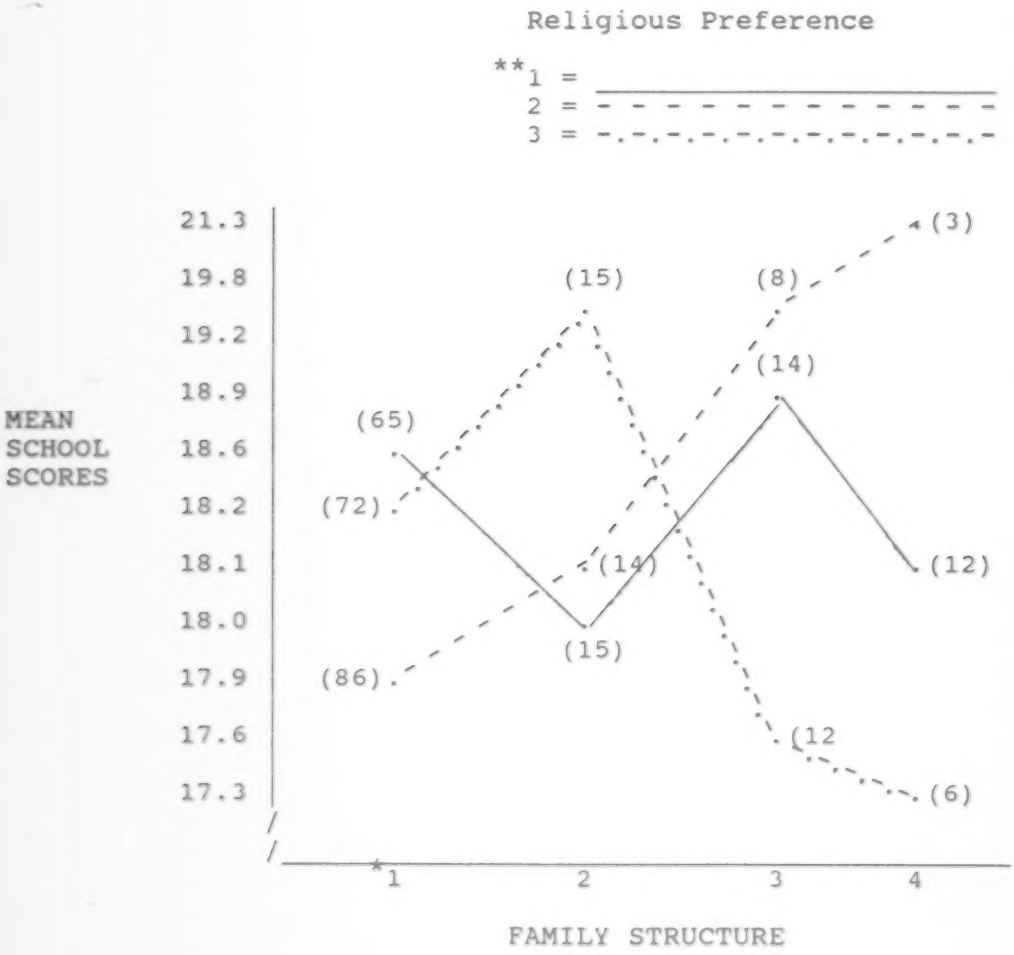
Two of the statistically significant comparisons were for interactions. The following interactions were significant:

1. family structure and religious preference for the dependent variable School, and

2. gender, family structure, and religious preference for the dependent variable Self.

The interaction between family structure and religious preference for the dependent variable School was depicted in a profile plot. Figure 5 contains mean School scores and curves for religious preference.

Figure 5: The Interaction Between Family Structure and Religious Preference for the Dependent Variable School



*1=Intact 2=Step-Parent 3=Single Parent 4=Foster Parent Other

**1=Presbyterian Baptist Methodist 2=Catholic Episcopal 3=Nondenominational Other

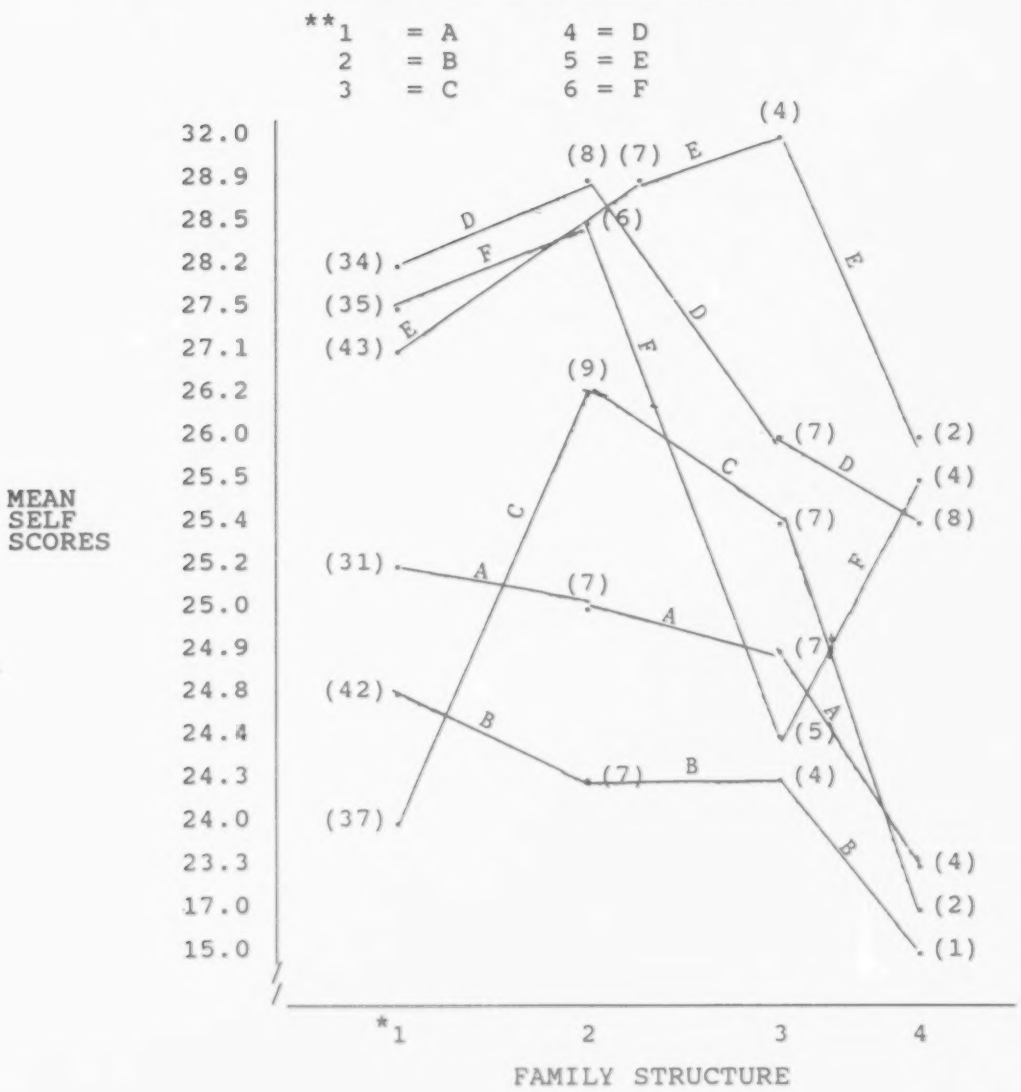
The interaction between family structure and religious preference was disordinal. The results cited in Figure 5 indicated the following:

1. Catholic and Episcopal students from a foster parent/other family structure reported numerically the greatest School stress of any subgroup, and

2. Nondenominational and Other students from a foster parent/other family structure reported numerically the lowest School stress of any subgroup.

The interaction among gender, family structure, and religious preference for the dependent variable Self was depicted in a profile plot. Figure 6 contains mean Self scores and curves for gender and religious preference.

Figure 6: The Interaction Among Gender, Family Structure, and Religious Preference for the Dependent Variable Self



*1=Intact 2=Step-Parent 3=Single parent 4=Foster Parent

**1=Male-Presbyterian Baptist Methodist 2=Male-Catholic Episcopal 3=Male-Non Denominational Other
4=Female-Presbyterian Baptist Methodist 5=Female-Catholic Episcopal 6=Female Non Denominational Other

The interaction among gender, family structure, and religious preference for the dependent variable Self was disordinal. The results cited in Figure 6 indicated the following:

1. males, regardless of religious preference from foster parent and other family structure, reported numerically the lowest stress of any subgroups, and

2. females, regardless of religious preference from stepparent family structure, reported numerically the greatest stress of any subgroups except females of Non-denominational and Other religious preference from single-parent family structure.

It was hypothesized in composite null hypothesis number five that the differences among mean Stress Questionnaire scores for high school students according to church attendance, Bible reading, and prayer would not be statistically significant. The following were cited in Table 5: variables, group sizes, means, standard deviations, F values, and probability levels.

Table 5: A Comparison of Mean Stress Questionnaire Scores for High School Students According to Church Attendance, Bible Reading, and Prayer Employing a Three-Way Analysis of Variance

Variable	n	M*	s	F value	p level
		School			
Church Attendance (E)					
1. Once a week	203	18.1	2.34		
2. Once a month Once a year	86	18.6	2.63	0.20	.7451
3. Never	33	18.5	3.37		
Bible Reading (F)					
1. Once a day Once a week	129	18.0	2.25		
2. Once a month	86	18.5	2.55	0.18	.8356
3. Never	107	18.4	2.84		
Prayer (G)					
1. Once a day	169	18.2	2.51		
2. Once a week Once a month	111	18.4[g]	2.33	4.19	.0160
3. Never	42	18.1[h]	3.17		
		Interactions			
		E x F		0.57	.6819
		E x G		1.35	.2499
		F x G		1.35	.2505
		E x F x G		2.62	.0511

(continued)

Table 5 (continued)

Variable	n	M*	s	F value	p level
		Relationships			
Church Attendance (E)					
1. Once a week	202	11.5	2.13		
2. Once a month Once a year	86	12.1[a]	2.94	3.73	.0251
3. Never	33	10.8[b]	2.47		
Bible Reading (F)					
1. Once a day Once a week	128	11.5	2.24		
2. Once a month	86	11.8	2.05	0.29	.7479
3. Never	107	11.5	2.38		
Prayer (G)					
1. Once a day	168	11.8[a]	2.21		
2. Once a week Once a month	111	11.6[a]	1.96	3.65	.0272
3. Never	42	10.6[b]	2.72		
		Interactions			
		E x F		1.12	.3464
		E x G		2.38	.0516
		F x G		1.78	.1325
		E x F x G		1.65	.1780

(continued)

Table 5 (continued)

Variable	n	M*	s	F value	p level
		Self			
Church Attendance (E)					
1. Once a week	203	25.9	3.66		
2. Once a month Once a year	85	27.0	3.98	0.99	.3739
3. Never	33	24.5	5.21		
Bible Reading (F)					
1. Once a day Once a week	129	25.7	3.69		
2. Once a month	86	26.8	3.63	0.93	.3959
3. Never	106	25.9	4.50		
Prayer (G)					
1. Once a day	169	26.5[d]	3.76		
2. Once a week Once a month	111	25.7	3.74	3.92	.0209
3. Never	41	25.2[e]	5.18		
		Interactions			
	E x F			0.29	.8813
	E x G			0.56	.6918
	F x G			0.18	.9481
	E x F x G			2.42	.0662

(continued)

Table 5 (continued)

Variable	n	M*	s	F value	p level
		Total			
Church Attendance (E)					
1. Once a week	202	55.5	6.66		
2. Once a month Once a year	85	57.9	7.49	1.64	.1964
3. Never	33	53.8	9.66		
Bible Reading (F)					
1. Once a day Once a week	128	55.2	6.79		
2. Once a month	86	57.2	6.95	0.61	.5413
3. Never	106	58.9	8.14		
Prayer (G)					
1. Once a day	168	56.6[d]	7.14		
2. Once a week Once a month	111	55.7	6.66	5.65	.0039
3. Never	41	54.0[e]	9.37		
		Interactions			
	E x F			0.07	.9922
	E x G			1.28	.2765
	F x G			0.94	.4389
	E x F x G			3.16	.0252

*The larger the value the greater the reported stress. The possible scores and theoretical means for each scale were as follows: School (6-24, 15); Relationships (4-16, 10); Self (9-36, 22.5); Total (19-76, 47).

[ab]Difference statistically significant at the .05 level according to Bonferroni (Dunn) t-test for means.

[de]Difference statistically significant at the .05 level according to Duncan's multiple range test for means.

Eight of the 28 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were rejected. Five of the statistically significant comparisons were for main effects. The following main effects were statistically significant:

1. prayer and the dependent variable Schools,
2. church attendance and the dependent variable Relationships,
3. prayer and the dependent variable Relationships,
4. prayer and the dependent variable Self, and
5. prayer and the dependent variable Total.

Information cited in Table 5 indicated the following for main effects:

1. individuals who reported prayer once a week or once a month had greater School stress than those who reported never,
2. individuals who reported church attendance once a month of once a year had greater Relationships stress than those who reported never,
3. individuals who reported prayer once a day, week, and month had greater Relationships stress than those who reported never,
4. individuals who reported prayer once a day had greater Self stress than those who reported never, and

5. individuals who reported prayer once a day had greater Total stress than those who reported never.

Three of the statistically significant comparisons were for interactions. The following interactions were statistically significant:

1. church attendance, Bible reading, and prayer for the dependent variable School;

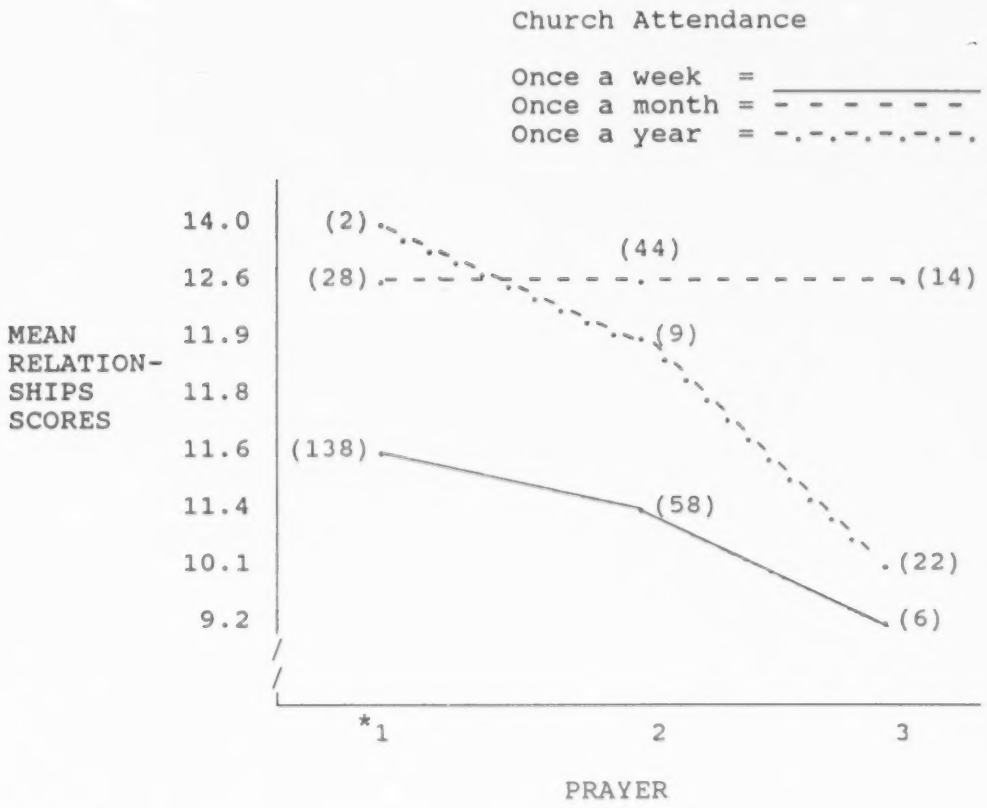
2. church attendance and prayer for the dependent variable Relationships; and

3. church attendance, Bible reading, and prayer for the dependent variable Total.

Information pertaining to the interactions among church attendance, Bible reading, and prayer for the dependent variable School was too incomplete for a profile plot. The information appeared to be incomplete due to the nature of the sample.

The interaction between church attendance and prayer for the dependent variable Relationships was depicted in a profile plot. Figure 7 contains mean Relationships scores and curves for church attendance.

Figure 7: The Interaction Between Church Attendance and Prayer for the Dependent Variable Relationships



*1 = once a day 2 = once a week once a month 3 = Never

The interaction between church attendance and prayer for dependent variable Relationships was disordinal. The results cited in Figure 7 indicated the following:

1. individuals who attended church once a week, month and year and reported prayer never had numerically the lowest mean Relationships stress of any subgroups, and

2. individuals who reported church attendance once a month, year, and never and who reported prayer once a day had numerically the highest Relationships stress of any groups.

Information pertaining to the interactions among church attendance, Bible reading and prayer for the dependent variable Total was too incomplete to put into a profile plot. The information appeared to be incomplete due to the nature of the sample.

Items number 20 and 21 of the Stress Questionnaire (Appendix D) addressed Who Adolescents Turn to in Times of Stress and How Adolescents Cope with Stress. Information from these two items was presented in Appendixes G and H.

Discussion

Summary

The purpose of the researcher was to investigate stress in western Kansas high school students. The sample was from 1A schools. The 1A schools were classified by the Kansas State Activities Association (1993-94). The 1A schools were defined as having less than 75 students enrolled in grades 10-12. The sample consisted of 322 participants, 159 males and 163 females. The independent variables investigated were gender, classification, family structure, religious preference, church attendance, Bible reading, and prayer. The dependent variables consisted of

scores from the following scales of the Stress Questionnaire: School, Relationships, Self, and Total. Five composite null hypotheses were tested employing analysis of variance (general linear model).

A total of 84 comparisons plus 56 recurring were made. Of the 84 comparisons, 28 were main effects and 56 were interactions. Of the 28 main effects, 12 were statistically significant at the .05 level. The following main effects were statistically significant.

1. gender for the dependent variable School,
2. gender for the dependent variable Relationships,
3. gender for the dependent variable Self,
4. family structure for the dependent variable Self,
5. gender for the dependent variable Total,
6. religious preference for the dependent variable School,
7. family structure for the dependent variable Total,
8. prayer for the dependent variable School,
9. church attendance for the dependent variable Relationships,
10. prayer for the dependent variable Relationships,
11. prayer for the dependent variable Self, and
12. prayer for the dependent variable Total.

The results of the present study indicated the following for main effects:

1. females reported greater stress related to School than males,

2. females reported greater stress related to Relationships than males,

3. females reported greater stress related to Self than males,

4. students from intact family structure and step-parent family structure reported greater stress related to Self than those from foster parent family structure, and

5. females reported greater total stress than males,

6. Presbyterian, Baptist, and Methodist students reported greater School stress than Catholic and Episcopal students,

7. students from stepparent family structure reported greater Total stress than those from foster parent and other,

8. individuals who reported prayer once a week or once a month had greater School stress than those who reported never,

9. individuals who reported church attendance once a month or once a year had greater Relationships stress,

10. individuals who reported prayer once a day, week, and month had greater Relationships stress than those who reported never,

11. individuals who reported prayer once a day had greater Self stress than those who reported never, and

12. individuals who reported prayer once a day had greater Total stress than those who reported never.

Of the 56 interactions 9 were statistically significant at the .05 level. The following interactions were statistically significant:

1. gender and classification for the dependent variable School,

2. gender, classification, and family structure for the dependent variable School,

3. classification and religious preference for the dependent variable Self,

4. classification and religious preference for the dependent variable Total,

5. family structure and religious preference for the dependent variable School,

6. gender, family structure, and religious preference for the dependent variable Self,

7. church attendance, Bible reading, and prayer for the dependent variable School,

8. church attendance and prayer for the dependent variable Relationships, and

9. church attendance, Bible reading, and prayer for the dependent variable Total.

Review of Literature and Results

A consistent finding in the research on stress of adolescents was that most high school students have experienced stress. There was, however, substantial evidence that there has been little research pertaining to adolescent stress. Stress for the adolescent was described as mental, emotional, physical, and behavioral responses to anxiety--producing events called stressors. The assessment of stress has been approached through interviews and by more objective means such as using instruments designed specifically to distinguish stressed adolescents from non-stressed adolescents. Mean scores for subgroups on all scales were greater than the corresponding theoretical means, thus indicating perceived stress.

Most of the literature pertaining to stress of high school students indicated that when males were compared to females, males reported less stress than females (Armacost, 1990; Peach, 1991; & Strubb, 1989). The results of the present study indicated significant differences between males and females pertaining to stress. The findings indicated that females reported greater stress than males, therefore supporting the results in the related literature.

Most of the literature pertaining to stress concerning classification (freshman, sophomore, junior, and senior) indicated that the ability to handle stress appeared to

improve as students progressed from freshman to senior years (Armacost, 1990). The findings of the present study indicted that there were some differences compared to the related literature concerning classification. The results of the present study indicated that females at all classification levels reported numerically greater stress than males. Female seniors reported numerically greater stress than any other classification group, and junior females reported numerically less stress than females for any other classification. Freshman males reported numerically less stress than any other classification. The results of the present study did not support those found in the related literature.

A consistent finding in the research indicated that one of the most investigated relationships with regard to adolescent stress was family structure. Most researchers who have studied the relationship between family structure and adolescent stress have found that those who live with both parents or intact families were less likely to report high stress than those who were raised in nonintact families. There was much information concerning family structure and stress in adolescents. Studies concerning the relationship between family structure and adolescent stress indicated that intact families are more likely to

provide stability and less stress for the high school student (Elkind, 1992; Dobson & Bauer, 1990).

The results of the present study indicated an association between family structure and adolescent stress. High school students from intact family structure reported greater stress than those from foster parent family structure. Female freshmen from single parent family structure reported numerically greater stress than any other subgroup. High school students from stepparent family structure reported greater stress than those from foster parent and other.

Generalizations

The results of the present study appeared to support the following generalizations:

1. females have greater stress related to Relationships than males,
2. females had greater Total stress than males,
3. students from stepparent family structure have greater Total stress than foster parent and other,
4. students who reported prayer once a day had greater Self stress than those who reported never,
5. significant interactions for:
    a. gender and classification -- School,
    b. gender, classification, and family structure -- School,

c. classification and religious preference -- Total,
d. family structure and religious preference -- School,
e. gender, family structure, and religious preference -- Self,
f. church attendance, Bible reading, and prayer -- School,
g. church attendance and prayer -- Relationships, and
h. church attendance, Bible reading, and prayer -- Total.

Implications

The results of the present study have several implications for other researchers, counselors, parents, educators, ministers, and other school personnel. The researcher identified populations of high school students who tended to have greater stress. Interventions can be targeted toward these high school students. These interventions may provide high school students with programs such as personal counseling which would assist high school students in developing coping skills. These skills may provide high school students with cognitive awareness of personal stressors, changing attitudes toward uncontrollable sources of stress, and developing problem-

solving and decision making skills. Providing a supportive environment further mitigates the impact of stress. Implementing team effort in counseling and developmental services and programs for high school students would further enhance personal, social, educational, and career development (Kansas Comprehensive School Counseling Program Model and Guidelines, 1993). The researcher provided a basis for future research. This research may be extended by counselors, psychologists, social workers, and other school personnel.

Recommendations

Results of the present study appeared to support the following recommendations:

1. the study should be replicated utilizing a random sample,

2. the study should be replicated in all-size schools, and

3. the study should be replicated in other geographical areas.

References

Armacost, R. L. (1990). High school stress and the role of counselors. The School Counselor, 38(2), 105-112.

Benjamin, L. (1987). Understanding and managing stress in the academic world. (Contract No. 400-86-0014). Ann Arbor, MI: The University of Michigan, Clearinghouse on Counseling and Personnel Services. (ERIC Document Reproduction Service No. ED 291 017).

Blom, G. E., Chaney, D. B., & Snoddy, J. E. (1986). Stress in childhood: An intervention model for teachers and other professionals. New York: Teachers College Press.

Brophy, B. & Walsh, M. (1986, October). Children under stress. U. S. News and World Report, pp. 58-63.

Brunswick, A. F., & Messeri, P. A. (1984). Origins of cigarette smoking in academic achievement, stress, and social expectations: Does gender make a difference? Journal of Early Adolescence, 4(4), 353-370.

Burke, R. H. & Weir, T. (1978). Sex differences in adolescent life stress, social support, and well-being. The Journal of Psychology, 98, 277-288.

Chandler, L. A. (1982). Children under stress: Understanding emotional adjustment reactions. Springfield, IL: Charles C. Thomas.

Coddington, R. D. (1972). The significance of life events as etiologic factors in the diseases of children: A study of a normal population. Journal of Psychosomatic Research, 16, 205-213.

D'Onofrio, J., & Klesse, E. (1990). Adolescent stress. Reston, VA: National Association of Secondary School Principals.

Dobson, J., & Bauer, G. L. (1990). Children at risk. Dallas, TX: Word Publishing.

Elkind, D. (1990). Stress and middle grader. The challenge of stress and suicide in early adolescence. Washington, DC: Office of Educational Research and Improvement.

Elkind, D. (1992). The hurried child. (rev. ed.). Massachusetts: Addison-Wesley Publishing Company.

Erikson, E. H. (1968). Identity: Youth and crisis. New York: Norton.

Fahs, M. E. (1987). Coping with in-school stress: Correlations among perceptions of stress, coping styles, personal attributes and academic achievement of inner-city junior high school students. (Unpublished doctoral dissertation, New York University, 1987).

Galyon, B. C. (1991). Stress during the adolescent years. (Unpublished Research Paper, Tennessee Technological University, 1991).

Gispert, M., Wheeler, K., Marsh, L., & Davis, M. S. (1985). Suicidal adolescents: Factors in evaluation. Adolescents, 20(80), 753-762.

Grannis, J. C. (1983a). Project on academic striving. Part I: Report on planning year, 1982-1983. Unpublished manuscript. The Public Education Association, New York.

Grannis, J. C. (1983b). Project on academic striving. Part II: Proposal for the W. T. Grant Foundation. Unpublished manuscript. The Public Education Association. New York.

Greenberger, E., & Steinberg, L. D. (1981). Adolescents who work: Health and behavioral consequences of job stress. Developmental Psychology, 17(6), 691-703.

Hamburg, B. A. (1974). Coping and adaptation. New York: Basic Books.

Hamburg, B. A., & Hamburg, D. A. (1975). Stressful transitions in adolescent endocrine and psychological aspects. Society, stress and disease--childhood and adolescence. Volume 2, London: Oxford University Press.

Hart, T. E. (1989). Student stress and suicide: How schools are helping. Oregon School Study Council, 32(6), 1-40.

Hash, V., & Vernon, A. (1987). Helping early adolescents deal with stress. Middle School Journal, 22, 22-23.

Hawkins, R. C. (1982). Childhood stress and coping: A review and cognitive developmental theory. Austin, TX (ERIC Document Reproduction Service No. ED 231-541)

Kansas Comprehensive School Counseling Program Model and Guidelines. (1993). Guidance Communications Council Task Force. Kansas State Board of Education, Topeka, KS.

Kansas State High School Activities Association. (1993-94). KSHSAA Handbook, Topeka, KS.

Larson, S., & Larson, D. (1990, May-June). Divorce: A hazard to your health? Physician, pp. 13-17.

Long, N., & Forehand, R. (1987). The effects of parental divorce and parental conflict on children: An overview. Developmental and Behavioral Pediatrics. 8(5), 292-295.

McMillan, J. H., & Schmacher, S. (1989). Research in education: A conceptual introduction. Glenview, IL: Scott, Foresman and Company.

Medeiros, D. C., Porter, B. J., & Welch, I. D. (1983). Children under stress: How to help with the everyday stresses of childhood. New Jersey: Prentice-Hall.

Minirth, F., & Meier, P. (1992). The stress factor. Chicago, IL: Northfield Publishing.

Novy, D. M., & Donohue, S. (1985). The relationship between adolescent life stress and delinquent conduct including conduct indicating a need for supervision. Adolescence. 20(78), 313-321.

Peach, L. E. (1991). A study concerning stress among high school students in selected rural schools. (Tech. Rep. No. 143). Cookeville, TN: Annual Education Conference.

Peach, L. E., & Reddick, T. L. (1989). A study to determine rural high school students' attitudes toward family and school relationships. (Tech. Rep. No. 143), Savannah, GA: Annual meeting of the Eastern Educational Research Association.

Sehnert, K. W. (1981). Stress/unstress. Minneapolis: Augsburg Publishing House.

Selye, H. (1974). Stress without distress. New York: Harper and Row, Publishers, Inc.

Strubbe, M. A. (1989). An assessment of early adolescent stress factors. (Tech. Rep. No. 143), Columbus, OH: National Middle School Association.

Thoresen, C. E., & Eagleston, J. R. (1983). Chronic stress in children and adolescents. Theory into practice, 22(1), 48-56.

Van Houten, T., & Golembiewski, G. (1978). Adolescent life stress as a predictor of alcohol abuse and or runaway behavior. Washington, DC. National Youth Alternative Project. (ERIC Document Reproduction Service No. ED 173 460).

Van Oteghen, S. L., & Forrest, M. (1988, Nov.-Dec.). Adolescent Stress. Strategies, pp. 5-11.

Wallerstein, J. S., & Blakeslee, S. (1989). Second chances: Men, women and children, a decade after divorce, who wins who loses and why? Technor and Fields: New York.

Warren, L. W., & Tomlinson-Keasey, C. (1987). The context of suicide. American Journal of Orthopsychiatry. 57, 41-48.

Warrick, D. (1991). How to handle stress. Colorado Springs, CO: Navpress.

Wells, C. E., & Ritter, K. Y. (1979). Paperwork, pressure and discouragement: Student attitudes toward guidance services and implications for the profession. The Personnel and Guidance Journal. 58, 170-175.

Yamamoto, K. (1979). Children's rating of the stressfulness of experiences. Developmental Psychology, 15, 581-582.

Appendix A

Instruction Sheet

Instruction

My name is Janet K. Walker, and I am currently working on a thesis regarding the stress of high school students in western Kansas. In order to collect data, I would like your assistance in completing the demographic data sheet and one stress questionnaire. Please complete the instruments in the order that they appear. The information which you will provide will not be identified with you in any way, so please answer each item honestly. You are not required to participate in this study. Your decision to participate or not is strictly your choice. If you do not wish to participate, please advise me of your decision as I distribute the instruments. After you have completed the instruments, bring them to me in front of the class. Thank you for your participation.

Appendix B

Letter of Permission

Box 40, RR I
Weskan, KS 67762
September 17, 1993

Dear Sir:

My name is Janet K. Walker, and I am a graduate student working toward a M.S. Degree in Counseling K-12 Fort Hays State University. At the present time, I am serving as counselor K-12 at USD #241, Sharon Springs, Kansas. In partial fulfillment for my Master's program, I am writing a thesis which is a study concerning stress among rural western Kansas high school students. My plans are to sample the Western Kansas Liberty League schools. I plan to conduct this study during the Fall of 1993. The purpose of this study is to identify stressful events in the lives of high school students in rural western Kansas.

With your permission, I would like to include the freshmen, sophomores, juniors and seniors in your school. Enclosed is a copy of the stress questionnaire and demographic material that would be administered to your students if you choose to participate. The individual student's responses will be completely confidential. My hope is that, through the findings of this study, counselors and teachers will be able to play a major role in helping students identify and deal with stressors in their lives.

Indicate below as to whether or not you give permission for your freshmen, sophomore, junior, and senior students to participate. Please return the permission slip in the enclosed envelope by Friday, October 1st. If you choose to participate in this study, I will contact you by phone. Feel free to contact me at (913) 943-5372 if you have any questions. Thank you for your assistance.

Kindest regards,

Janet K. Walker
Counselor, Graduate Student
Box 40, RR 1
Weskan, Kansas 67762

JKW:jkb
Enclosures

Appendix C

Demographic Data Sheet

AGE_____ Male_____ Female_____

CLASSIFICATION: FR._____ SOPH._____ JR. _____ SR._____

TOWN IN WHICH I ATTEND SCHOOL _____

FATHER'S OCCUPATION _____

MOTHER'S OCCUPATION _____

TYPE OF FAMILY:
1) Intact (biological father and mother) _____
2) Father and Stepmother _____
3) Mother and Stepfather _____
4) Single Father _____
5) Single Mother _____
6) Foster Parent _____
7) Other (Please specify) _____

RELIGIOUS PREFERENCE:
1) PRESBYTERIAN _____
2) BAPTIST _____
3) METHODIST _____
4) CATHOLIC _____
5) EPISCOPAL _____
6) NONDENOMINATIONAL _____
7) OTHER (Please specify) _____

HOW OFTEN DO YOU ATTEND CHURCH?
1) Once a week _____
2) Once a month _____
3) Once a year _____
4) Never _____

HOW OFTEN DO YOU READ THE BIBLE?
1) Once a day _____
2) Once a week _____
3) Once a month _____
4) Never _____

HOW OFTEN DO YOU PRAY?
1) Once a day _____
2) Once a week _____
3) Once a month _____
4) Never _____

Appendix D

Stress Questionnaire

DATE _____

STRESS QUESTIONNAIRE

DIRECTIONS: Please read carefully! Do not put your name on this questionnaire. The following are stress statements that you may have experienced in high school. Please circle whether you strongly disagree, disagree, agree, or strongly agree. All statements should be completed (rated) for the questionnaire to have maximum validity. There are no right or wrong answers.

1. Academic classwork such as mathematics and science causes more stress than elective type coursework.

   Strongly disagree Disagree Agree Strongly agree

2. School and classroom rules causes stress.

   Strongly disagree Disagree Agree Strongly agree

3. Relationships with the opposite sex causes stress.

   Strongly disagree Disagree Agree Strongly agree

4. Concern about grades causes stress.

   Strongly disagree Disagree Agree Strongly agree

5. Negative home and family relations causes stress.

   Strongly disagree Disagree Agree Strongly agree

6. Substance use (alcohol and other drugs) causes stress.

   Strongly disagree Disagree Agree Strongly agree

7. Feelings about personal appearance causes stress.

   Strongly disagree Disagree Agree Strongly agree

8. Outside employment responsibilities causes stress.

   Strongly disagree Disagree Agree Strongly agree

9. Existing teacher attitudes and classroom climate causes stress.

   Strongly disagree Disagree Agree Strongly agree

10. Pressure to succeed and achieve causes stress.

    Strongly disagree Disagree Agree Strongly agree

11. Taking tests causes stress.

    Strongly disagree Disagree Agree Strongly agree

12. Concern about financial obligations causes stress.

    Strongly disagree Disagree Agree Strongly agree

13. Feelings about self-worth and personal respect causes stress.

    Strongly disagree Disagree Agree Strongly agree

14. Involvement and participation in extra-curricular activities causes stress.

    Strongly disagree Disagree Agree Strongly agree

15. Concern about my health causes stress.

    Strongly disagree Disagree Agree Strongly agree

16. Worry about being accepted by my peers causes stress.

    Strongly disagree Disagree Agree Strongly agree

17. Concern about relationships with friends causes stress.

    Strongly disagree Disagree Agree Strongly agree

18. "Problems" at school causes stress.

    Strongly disagree Disagree Agree Strongly agree

19. Thoughts about my future success causes stress.

    Strongly disagree Disagree Agree Strongly agree

20. I would most likely talk about school related problems with: (check one)

_____ Teacher

_____ Principal

_____ Friend

_____ Parent

_____ Counselor

21. Check one of the following:

_____ I cope well with stress.

_____ I cope OK with stress.

_____ I don't handle stress well.

Appendix E

Letter Requesting Permission to Use Stress Questionnaire

March 4, 1993

Dr. Larry Peach, Professor
Educational Administration and Supervision
Tennessee Tech University
Cockeville, Tennessee 38505

Dear Dr. Peach:

This letter is in reference to the phone call that we had last week discussing the questionnaire that you gave to students concerning stress among high school students (1991) in selected rural Tennessee schools. As you already know, my name is Jan Walker and I am working toward a Master's Degree in Counseling K-12 at Fort Hays State University in Hays, Kansas. In partial fulfillment of the requirements necessary for this degree, I am doing a thesis. My thesis topic is a study concerning stress among high school students in western rural Kansas, and I hope to survey 250 to 300 students as I gather data.

I am requesting permission to use the questionnaire that you used in your study concerning situations that cause stress for high school students in my research. The scores from this questionnaire will be used as the dependent variable in my study and the following will be my independent variables: gender, classification, religion, family type, socio-economic status, autonomy, and extended family. I would appreciate it so much, if you would send me a copy of the questionnaire that has not been used, and could I have permission to revise any of the questions that you have on it?

Through my research, I am hoping to discover some common factors that causes stress among high school students in rural Kansas and because of this discovery, I, as well as other professionals and parents can be more effective in helping to prepare our young people for life in society.

Kindest regards,

Janet K. Walker
Box 40, RR I
Weskan, Kansas 67762
1-913-943-5372

JKW:jkb

Appendix F

Letter from Dr. Larry E. Peach

Responding to Letter of Request

Tennessee Technological University
Department of School Services Personnel and Psychology
Box 5031 . Cookeville, TN 38505 . 615-372-3457

July 23, 1993

Ms. Janet Walker
Box 40, RR 1
Weskan, KS 67762

Dear Ms. Walker:

You have my permission to use the adapted questionnaire concerning "Student Stress" used in a 1991 study which was conducted in the Upper Cumberland Geographic Region of Middle Tennessee in your thesis. I have no objection to your including a copy of the questionnaire in the appendix of your study. The reliability of the instrument was not determined since it was used only to solicit general perceptions about the issue of student stress. A more sophisticated research study would require attention to the validity and reliability of the instrument. Best wishes for success in your graduate study.

Sincerely,,

Larry Peach

Larry Peach, Professor

mjw

Appendix G

Who Adolescents Turn to in Times of Stress

Who students reported they would turn to in times of stress

	Number of Students Reporting	% Reporting
Teacher	9	2.8
Principal	3	0.9
Friend	194	60.2
Parent	93	28.9
Counselor	23	7.1

Appendix H

How Adolescents Cope with Stress

How well students reported they coped with stress

	Number Reporting	% Reporting
I cope well with stress.	110	34.2
I cope OK with stress.	165	52.2
I don't handle stress well.	47	14.6

Appendix I

Crombach Alpha Reliability Coefficients

Crombach Alpha Coefficients for Scales and Total

Subscales	Reliability Coefficients
School	.66
Relationships	.65
Self	.75
Total	.84

Appendix J

Factor Loading of Each Item with Scale School

Factor Loading of Each Item with Scale School

Item #	Factor Loading
1	.59*
2	.55
4	.59
9	.68
11	.64
18	.63

*All values were statistically significant at the .01 level.

Appendix K

Factor Loading of Each Item with Scale School

Factor Loading of Each Item with Scale Relationships

Item #	Factor Loading
3	.70*
5	.63
16	.73
17	.77

*All values were statistically significant at the .01 level.

Appendix L

Factor Loading of Each Item with Scale Self

Factor Loading of Each Item with Scale School

Item #	Factor Loading
6	.46*
7	.68
8	.52
10	.67
12	.56
13	.68
14	.60
15	.54
19	.56

*All values were statistically significant at the .01 level.

Appendix M

Factor Loading of Each Item with Scale Total

Factor Loading of Each Item with Scale Total

Item #	Factor Loading
1	.38*
2	.24
3	.48
4	.57
5	.53
6	.30
7	.65
8	.44
9	.49
10	.66
11	.50
12	.52
13	.67
14	.55
15	.48
16	.62
17	.67
18	.56
19	.52

*All values were statistically significant at the .01 level.

Appendix N

Correlation Coefficients Between Scales

Correlation Coefficients Between Scales

	School	Relationships	Self
School		.45*	.48
Relationships	.45		.66
Self	.48	.66	

*All values statistically significant at the .01 level.

Appendix O

Correlation Coefficients Between Scales and Totals

Correlations Coefficients Between Scales and Totals

Scales	Totals
School	.74*
Relationships	.82
Self	.91

*All values statistically significant at the .01 level.